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Bay Area's Computer Magazine
MID-DECEMBER 1988 • 51

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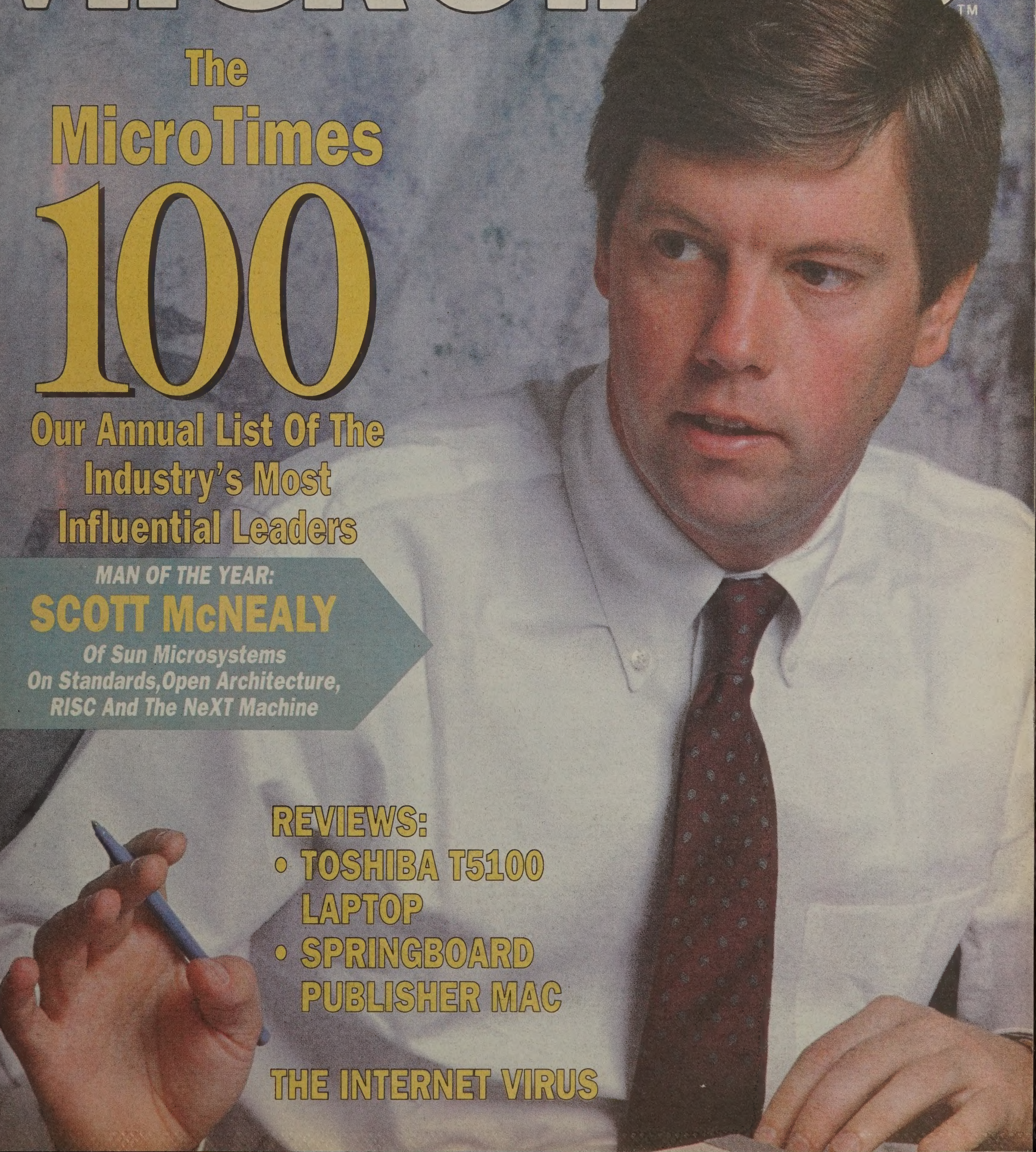

The MicroTimes 100

Our Annual List Of The Industry's Most Influential Leaders

MAN OF THE YEAR:

SCOTT McNEALY

Of Sun Microsystems
On Standards, Open Architecture,
RISC And The NeXT Machine

REVIEWS:

- **TOSHIBA T5100 LAPTOP**
- **SPRINGBOARD PUBLISHER MAC**

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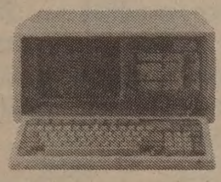

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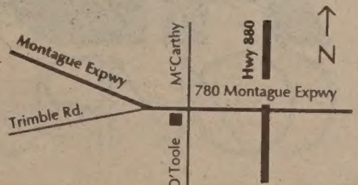

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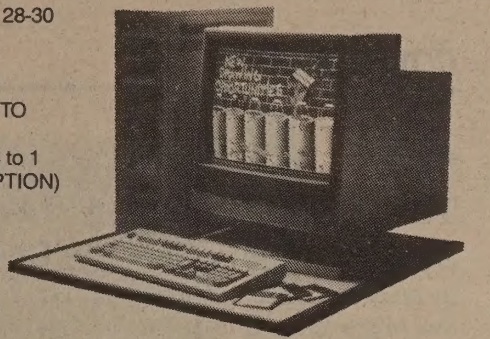

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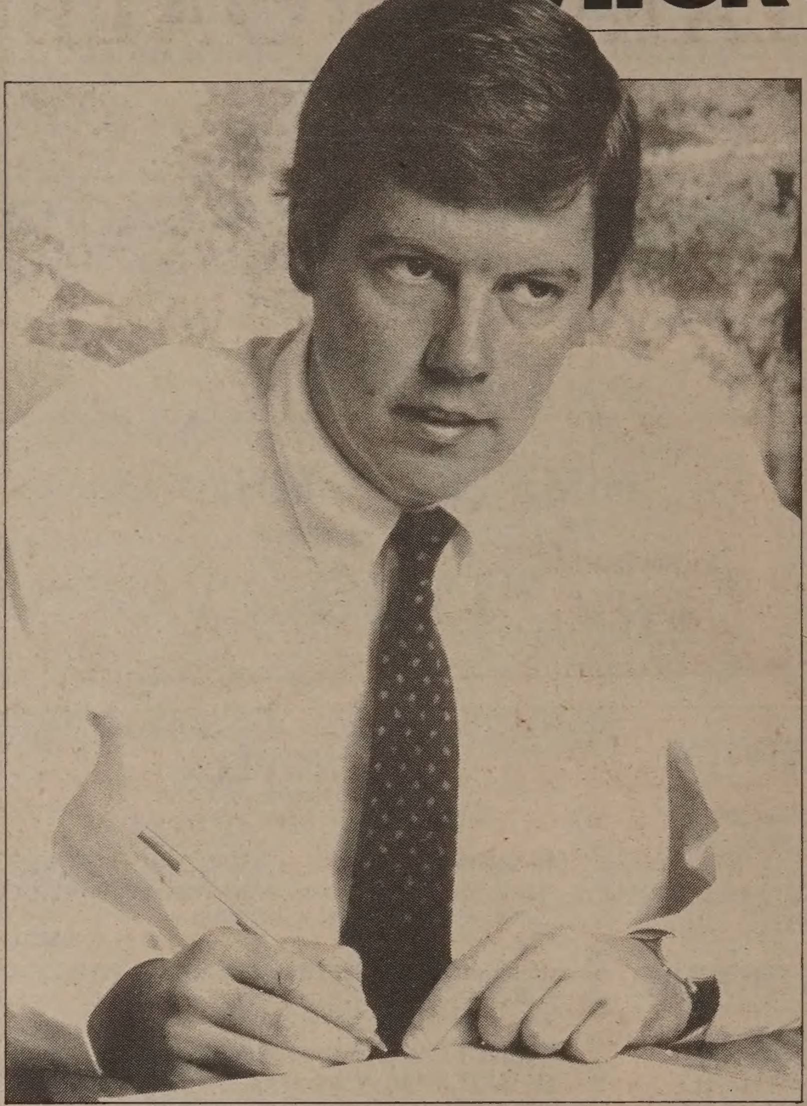

COVER AND CONTENTS PHOTOS: MICHAEL JAY

COVER STORY

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The World According to Sun
Scott McNealy Sets the Record Straight

By Mary Eisenhart and Steve Guttman

Sun Microsystems president/chairman/CEO (and *MicroTimes* Man of the Year) Scott McNealy talks about the philosophy behind his company's phenomenal success and future strategies. In the process, he takes a few shots at the press's apparent inability to understand Sun, the hidden pitfalls of the NeXT workstation and the dubious merits of the Open Software Foundation.

The MicroTimes 100

Our Annual List Of The Industry's Most Influential Leaders

58

This year's list includes some familiar faces and quite a few new ones, and indicates some interesting trends: a sudden industry-wide interest in Xerox PARC technology, the importance of connectivity and the increasingly ubiquitous UNIX.

REVIEWS

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Probably not for the budget-minded at around $7000, this powerful laptop offers fast 386 performance, hard disk storage and EGA display.

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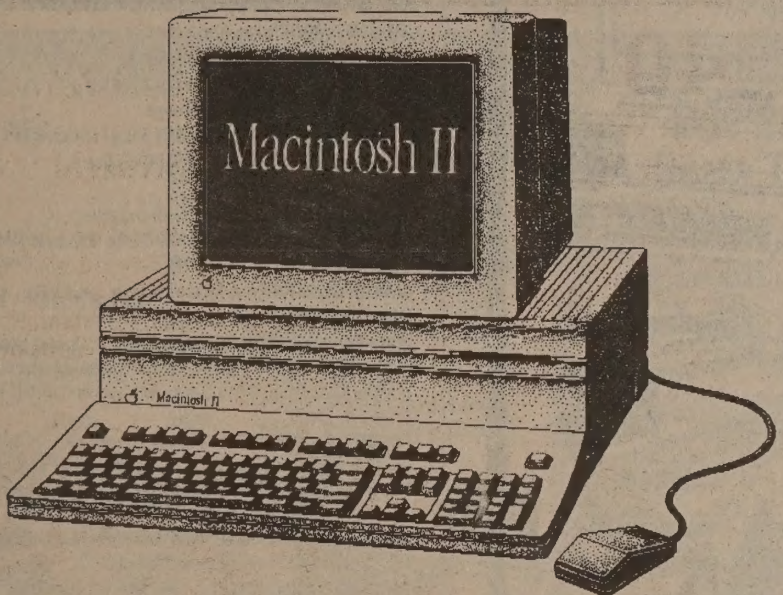

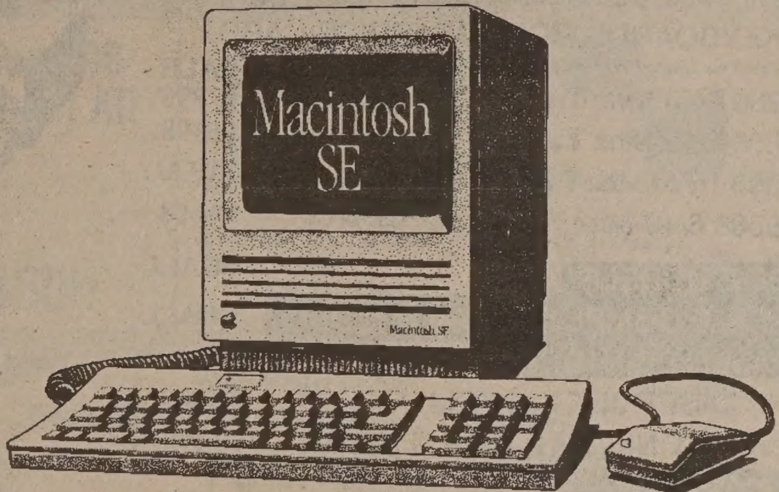

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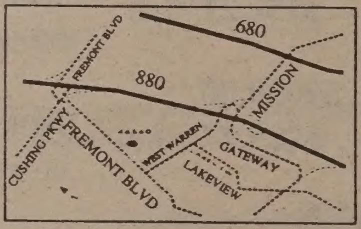

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CONTRIBUTING PHOTOGRAPHERS Ken James, Michael Jay, Pat Johnson, Jim Marshall, Ann Summa
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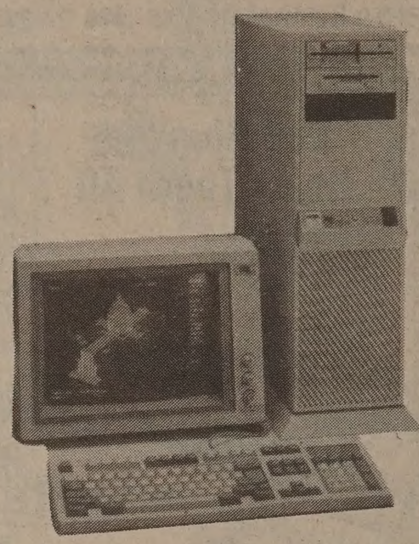

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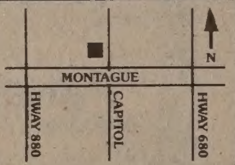

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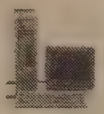

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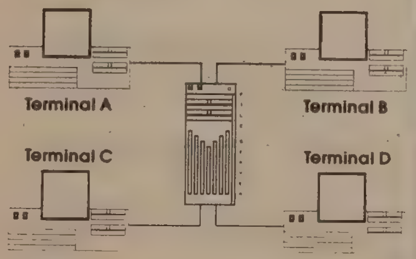

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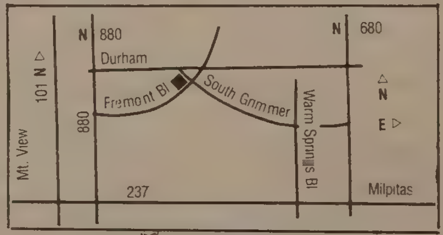

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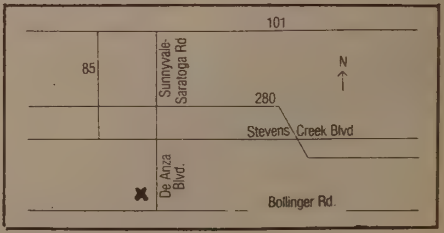

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December 12 C Language Seminar. San Francisco. San Francisco PC Users Group. Call: Dan Baumbach, (415) 457-0729.

December 12 Micro Explorer II Demo. Santa Clara. Prolog Forum Users Group. Call: (415) 657-4075.

December 12-14 Neural Networks For Artificial Intelligence Seminar. San Francisco. Technology Transfer Institute. Call: (213) 394-8305.

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December 13 Introduction To HyperCard Class. Fort Mason, Building D, San Francisco. Computer Alliance. Call: (415) 771-1671.

December 13 Macintosh SIG Meeting. Cupertino. Software Entrepreneurs' Forum. Call: Tony Meadow, (415) 644-9400.

December 13-16 Microprocessor Troubleshooting: Hands-on Tools & Techniques Course. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

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December 14 Enable Seminar. San Francisco. San Francisco PC Users Group. Call: Sandi Baker, (415) 946-1716.

December 14 High Technology Entrepreneurial Council Networking And Holiday Party. The High Technology Entrepreneurial Council. Call: Rachel, (415) 339-3895.

December 14-21 Soviet Export Goods Exhibition: Cooperation Through Trade. New York, NY. The USSR Chamber of Commerce and Industry. Call: D. Wolstenholme, (703) 893-4545.

December 15 dBase Seminar. San Francisco. San Francisco PC Users Group. Call: John Stephenson, (415) 488-0342.

December 15 Modula-2 Seminar. San Francisco. San Francisco PC Users Group. Call: Richard Lesnick (415) 863-0361.

December 15 SEF Meeting—Making Sense Of Groupware. Palo Alto. Software Entrepreneurs'

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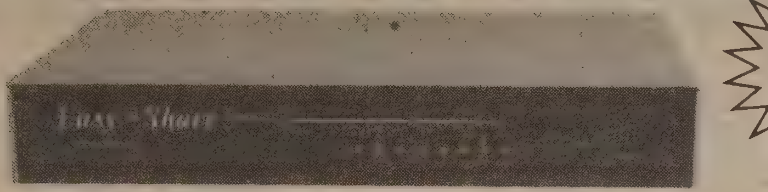

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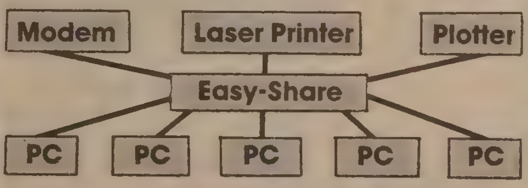

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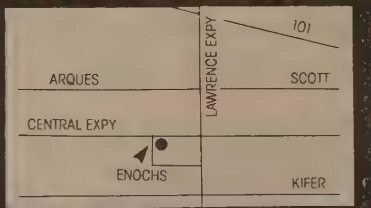

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December 17 Marin Computer Show & Sale. Marin Civic Center Exhibit Hall. East West Computer Shows. Call: (415) 388-8893.

December 17 Shop Till Ya Drop Computer Swap. San Jose. Microshows. Call: 1-800-433-7469.

December 18 San Francisco Computer Show & Sale. Hall of Flowers. East West Computer Shows. Call: (415) 388-8893

December 19 Framework & Symphony Lecture. San Francisco. San Francisco PC Users Group. Call: (415) 221-9166.

December 20 OOP SIG. Palo Alto. Software Entrepreneurs' Forum. Call: Deam Ritz, (415) 859-1043.

December 20 Using HyperCard Class. Fort Mason, Building D, San Francisco. Computer Alliance. Call: (415) 771-1671.

January 11-13 International Superconductor Applications Convention: SC Global '89. San Francisco. Superconductor Applications Association. Call: (714) 586-8727.

January 11-13 Software Requirements & Design Specifications Course. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

January 14 MS-DOS Survival Skills Seminar. San Francisco. Prolog Financial Systems. Call: (415) 441-3117.

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January 15 SEF Meeting—Therese Myers of Quarterdeck. Palo Alto. Software Entrepreneurs' Forum. Call: (415) 854-7219.

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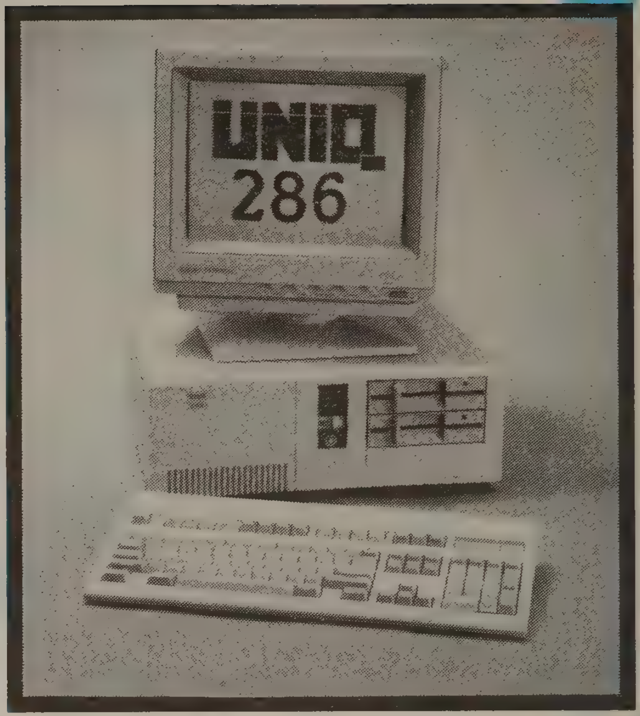

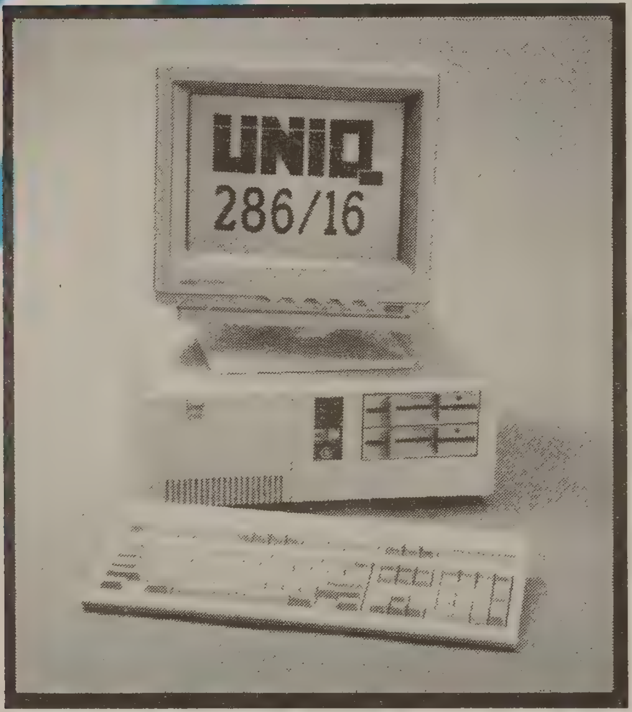

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- Diagnostic software on-board ROM
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- Clock/Calendar
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- Guaranteed DOS, OS/2, UNIX, Novell compatible
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- Diagnostic software on-board ROM
- "0/1" wait states
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- 80287/80387/Weitek math co-processor sockets
- One 32/bit, Four 16/bit, Two 8/bit slots
- Clock/Calendar
- NiCad rechargeable system battery
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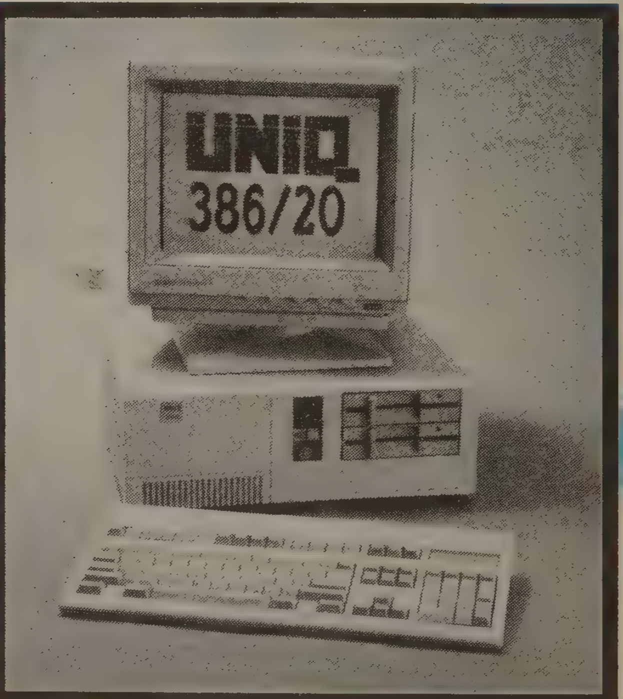

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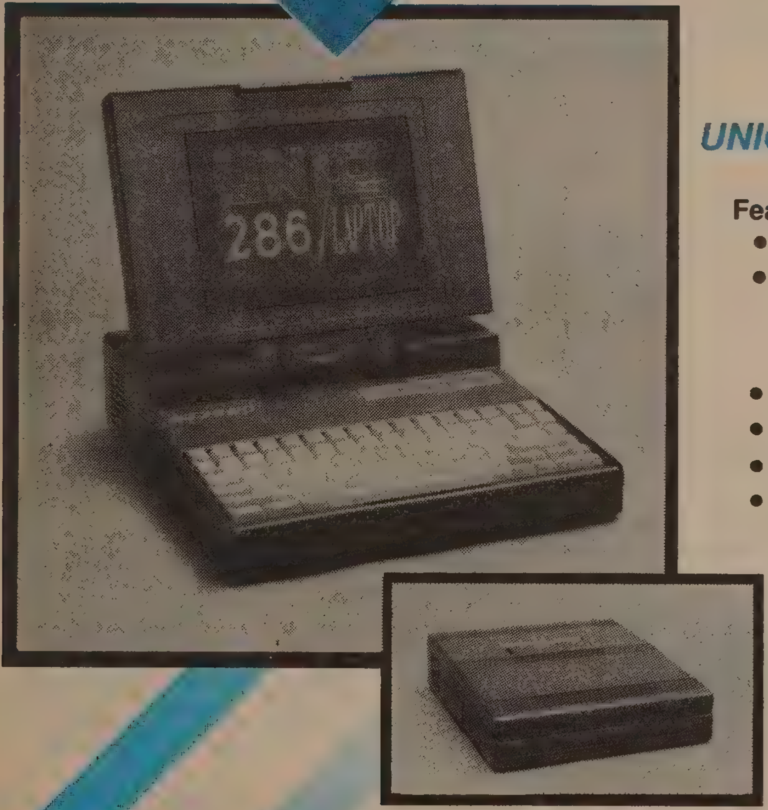

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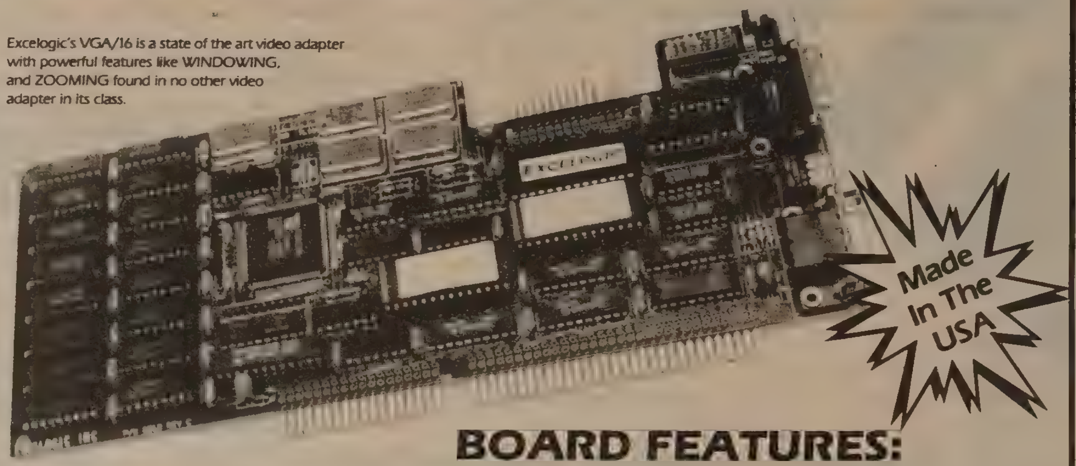

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January 23-25 The 1988 Optical Disk Systems Conference: "From the Mail Room to the Board Room." Phoenix, Arizona. CAP International. Call: Kristin Fischer, Conference Coordinator, at (617) 982-9500.

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January 24-27 UNIX Hands-on Workshop. San Francisco. Integrated Computer Systems. Call: 1-800-421-8166.

January 25-27 Software Maintenance Course. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

January 30-February 3 USENIX Association Winter 1989 Technical Conference. San Diego. USENIX Association. Call: Donnalyn Frey, (703) 764-9789.

January 31-February 2 DB/EXPO'89. San Francisco. Norm De Nardi Enterprises. Call: (415) 941-8440.

February 5-7 SAFECON-Software And Firmware CONference. San Jose. MultiDynamics, Inc. Call: Anne Weber, (714) 669-1201.

February 10-11 The 1989 Digital Photography & Editing Conference. Hilton Hotel, Sunnyvale. Sacramento Bee & The San Jose Mercury News. Call: (408) 738-4888.

February 14-17 Project Management: Planning, Scheduling, Tracking & Controlling Course. San Francisco. Integrated Computer Systems. Call: 1-800-421-8166.

February 14-17 Software Development '89 Conference. Burlingame. Miller Freeman Publications. Call: KoAnn Tingley, (415) 995-2471.

February 15-17 Software Development '89 Seminar. San Francisco. Software Development Seminars. Call: (415) 397-1881.

February 28-March 3 Systems Engineering For Integrated Hardware/Software Applications Course. San Francisco Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

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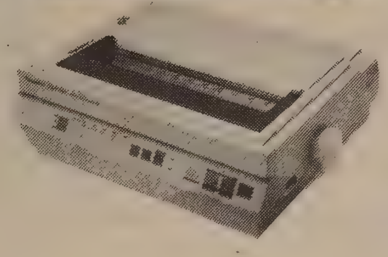

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NEWS
AND ANALYSIS

BY PAUL HOFFMAN

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Paul Hoffman is an industry analyst who has been covering microcomputer technology for ten years. He can be reached on USENET (phoffman@well) and MCI Mail (264-3171). He also writes popular microcomputer books.

The Year Of Waiting

1988 In Review

It may be a bit premature to review the year's microcomputer news before December is finished, but previous years have shown that December is a slow news month because everyone is out buying Christmas gifts and computers as last-minute writeoffs. Still, you never know when a surprise might crop up, especially if you are hooked into a national network. Given how little really interesting news happened this year, it may not be too soon to cut off "The Year of Waiting."

What exciting happened in 1988? Very little, unless you like waiting around. Every industry prognosticator had a different story a year ago about the thrills and chills we would see in 1988. "OS/2 will be ready by the end of the year." "LANs will really catch on." "1988 will be the first year of universal electronic mail." "Steve Jobs will really show up Apple." "UNIX will take off like you wouldn't believe." "Apple will really get its act together, Mac prices will drop and sales will soar." Any of those things might come true in 1989, but they certainly didn't happen in 1988. Given that the market is being pulled more forcefully in different directions by manufacturers, it seems unlikely that more than one or two of those could even come true in 1989. You'll just have to wait.

Waiting seemed to become a major industry pastime in 1988. Waiting for Lotus to put out *1-2-3* release 3. Waiting for Lotus to postpone it again. Waiting for a judge to start hearing any of the half-dozen cases that could change the face of the computer industry. Waiting for the NeXT machine to be released. Waiting for the election. Waiting for clone makers to come out with Micro Channel models. Waiting for some excitement. "Wait until you see our next product: it'll blow your socks off!" Noticing at the end of the year that your socks were firmly in place.

By no means was the industry stagnant. Sales went up for most manufacturers and major computer retailers, sometimes at alarming rates. The old standards, both hardware and software, did very well, and no major companies went out of business. IBM sold lots and lots of computers, and so did Apple. Microsoft updated almost every one of its programs and saw a huge sales increase. The top manufacturers did quite well, and a few small companies did a reasonable job as well. The number of interesting new developments, however, was very small. The most touted ones were almost not worth the waiting.

> The number of interesting new developments was very small. The most touted ones were almost not worth the waiting.

The two new types of software that became popular in 1988 were "executive information organizers" (like *GrandView* from Symantec and *Agenda* from Lotus) and "desktop presentation software" (like *More II* from Symantec, *PowerPoint* from Microsoft). Both of these categories of software will grow for a while in sales and in competitive packages, but are likely to hit a wall when the small number of executives who want to use a computer to help run their lives or help them speak have bought their software. These are the same people who not only refuse to use the token PC on their desk for anything other than connecting to the mainframe, they are also the ones who continue to limit acquisitions of PCs in their companies. As the industry is learning, executives don't always know what is good for them.

The hardware scene wasn't much better for keeping awake. IBM continued to churn out PS/2 systems with Micro Channel Architecture while the clone makers insisted that IBM's sales figures were inflated. Then, when it became obvious that IBM was really selling a whole bunch of PS/2s (the peripheral board manufacturers could have told you that), the clone makers tell the press that IBM is making it too difficult to legally make a PS/2 clone. So they banded together to create the Extended Industry System Architecture (EISA)

Ashton-Tate Sues Fox Software

The lawyers are back, this time trying a new angle on the copyright issue.

Ashton-Tate, maker of the *dBASE* line of database management systems, has sued Fox Software for copyright infringement. Ashton-Tate claims that Fox's popular *FoxBASE+* software for the IBM PC and Macintosh infringes on the look and feel of the *dBASE* line, and therefore infringes on their copyright. In addition, it claims that since the *FoxBASE+* packages generate *dBASE*-compatible code, it infringes on their copyright on the *dBASE* language. The latter argument is, even by Ashton-Tate's admission, unsupported by any legal precedent.

The lawsuit comes just after COMDEX, where Fox showed preliminary versions of a new version of *FoxBASE+* for the PC with an interface even more different than the current one is from *dBASE IV.*

In what is likely to be a very sticky issue for Ashton-Tate, Fox will probably file a counter-suit which claims that Ashton-Tate misappropriated some of Fox's technology and incorporated it into *dBASE IV.* During the past few years, Ashton-Tate has made overtures to many *dBASE* add-on and replacement companies, sometimes viewing their source code under a non-disclosure agreement. If they did that with Fox and then used what they learned from Fox's source code in *dBASE IV*, they could be liable for huge damages and a significant loss of face in the business community. Already, many buyers of Ashton-Tate products have voiced objections to the suit, saying that it is limiting their future paths and their ability to use faster compatible products like *FoxBASE.*

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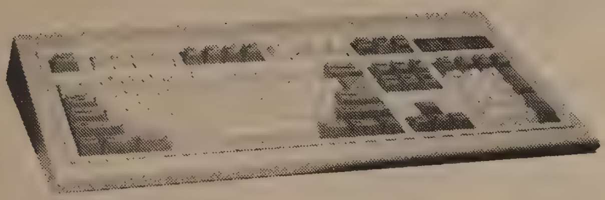

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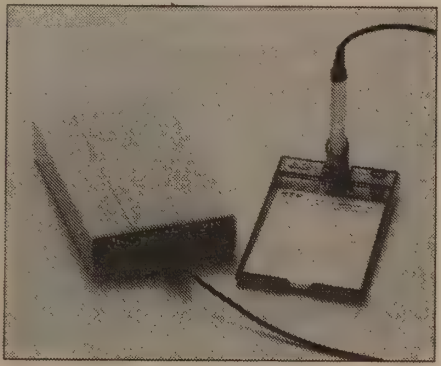

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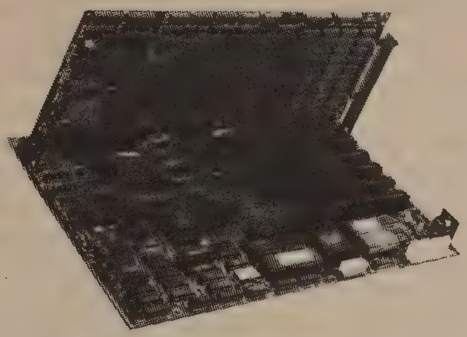

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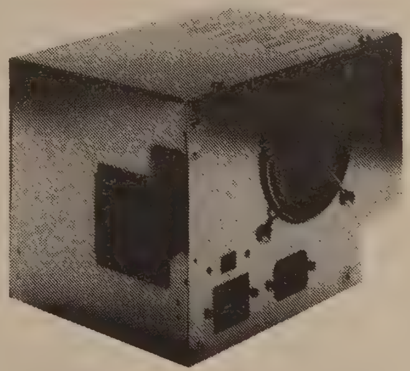

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NEWS AND ANALYSIS

and announced that not only was it better than the MCA bus, you had to wait a year before you could get one. More waiting. Then many of the original members of the EISA group quietly announced that they probably would have PS/2 clones out before their EISA systems. Just wait until the middle of 1989.

The most universally griped-about subject was the high cost and low availability of RAM chips. Thanks to our tariffs (put in place at the request of the US chip makers), the price of RAM went up by more than 600%. Most major computer manufacturers (other than IBM) said that this caused them not to come out with new models this year because users wouldn't be able to afford them. "Just wait until RAM prices go down." Ostensibly, the move was supposed to punish the Japanese and spur American companies to start building more of its own RAM, but neither happened. No serious action was taken to overturn the tariffs, so we are still stuck with not enough memory to run the new, bigger programs. OS/2 may be the big loser in the RAM game, since it takes four megabytes to run OS/2 Presentation Manager well.

Who wasn't complaining in 1988? Lawyers, for one. Although they too had to wait for a reasonable ruling on copyright for software, their meter was running so they didn't mind going nowhere fast. Apple sued Microsoft and Hewlett-Packard over the similarity of *Windows* and *New Wave* to the Macintosh. Lotus dragged its heels in its suit against Paperback Software and Mosaic over the similarity of *VP-Planner* and *Twin* to *1-2-3*. Since lawyers are still one of the least computerized professions, they didn't seem to mind the amount of creativity lost due to the suits delays. "Wait until next year: we'll have something definite by then." The most definitive case to be tried, between Intel and NEC over the copyrightability of chip instructions and microcode, was abruptly halted when the judge was discovered to have a tiny amount of Intel stock. The case is being retried.

From the press releases being churned out by the public relations industry, you'd think that this was the best of times. It is hard to imagine how many trees were killed for some of the announcements that were made and five copies sent to each computer magazine in the country. A new trend in product announcements is the "dual announcement." A few months before the product is really ready, announce it with a future ship date. Then, when you are actually beginning to ship the product, announce it again. The idea of the first announcement is to generate demand while the end users wait around for the testing to be finished. The second announcement can usually be translated as "we think there are few enough bugs to not catch too much flak in the newspapers and we're mailing out the boxes now."

Another forest was slaughtered for press releases and photos of who got promoted to vice president of every uninteresting company in the country. Literally thousands of such letters go out each year, usually accompanied by a photo of an indistinguishable white male in a suit. Somehow, this is supposed to signify progress in the industry, that there are more and more vice presidents every month, but it is more indicative of the waste inherent in the public relations process. Since no one is generating much excitement with their new products, the PR people have to send out something.

The most interesting stories of the year were not the things that you read in press releases. Much to the dismay of many companies, news happens outside of what they can control. Although product announcements did make some headlines, they were in the minority. The most interesting news stories of the year were:

•SQL became the most-used buzzword in the database industry. Most major database management packages have switched to, or are moving rapidly towards, being able to produce queries in a standard fashion. This means that it is more likely that systems from different manufacturers will be able to work together in the future.

•AT&T bought 20% of Sun's stock. This riled many of Sun's competitors, especially those who feared that Sun's previous deals with AT&T gave it an unfair advantage in the UNIX market. After the purchase announcement, 16 manufacturers officially protested the move, although AT&T pretty much ignored their complaints.

•Apple released its A/UX UNIX-based operating system for the Mac II. After almost a year, however, very few people have had a chance to purchase it, and it does not live up to the early promises of compatibility with regular Mac software.

•Apple sued Microsoft and Hewlett-Packard over their use of the Macintosh user interface. The case revolves around the still-murky question of whether or not it is all right to emulate the way a piece of software appears to a user and the way the user interacts with it. Apple claims that Microsoft *Windows* and Hewlett-Packard's *New Wave* operating environments look and feel too much like a Macintosh to be legal; of course, Microsoft and H-P disagree. To date, courts have come out with conflicting rulings on what is and is not allowed, so the ruling could go either way.

•The U. S. signed the Berne Convention on copyrights, which could change the way that software copyrights are enforced in the future. Part of the Berne Convention states that the US must protect the "moral rights" of authors over their works. This could affect the look-and-feel cases now pending, since the uniqueness of the look of a piece of software could fall under the moral rights concept.

•IBM and many other UNIX vendors joined forces to wrest control of the UNIX standard away from AT&T. The Open Software Foundation (OSF) will produce its own version of UNIX and utilities, and will set a standard for how software vendors can produce programs that work on all OSF-compliant machines. Supporters of AT&T followed suit a few months later by forming their own group to promote the next release of UNIX from AT&T.

•Apple angered many of its customers by raising its prices by about 15%. To make matters worse, Apple claimed that it did so not only because of higher RAM prices, but because they felt that people could afford it. The price increase also hit their popular LaserWriter IINT and IINTX PostScript laser printers.

•Steve Jobs released the first computer from his new company, NeXT. The single-user computer is aimed at the higher-education market and sports many features unavailable on current computers. The $6,500 system includes a super-high resolution screen that can display text and graphics better than most current monitors.

•IBM and Microsoft released the Presentation Manager for OS/2. This user interface gives a standard method for interacting with OS/2 programs. Although not many people are using OS/2, Presentation Manager will make it easier for software developers to market OS/2 software, since buyers will be assured that it will meet the standard IBM interface.

1989 may be more exciting than 1988, but it will probably involve just as much waiting. Apple or any of the clone makers could come out with more exciting machines. Some software company may be working on the next *1-2-3* that will become instantly useful to millions (or tens of millions) of people. Companies may come off their high horses and start really making it easier to network. One of the many lawsuits may give a clear indication of how the industry should deal with copyright. On the other hand, we might have to wait many years for any of the above.

IBM/Microsoft Ship OS/2 Presentation Manager

The ghosts and goblins of the microcomputer industry were out on Halloween this year. In a joint announcement, Microsoft and IBM released OS/2 Presentation Manager, a product they announced 18 months ago. Presentation Manager is the graphical user interface for OS/2, and it closely resembles Microsoft's *Windows* package for the IBM PC, which in turn closely resembles the Macintosh user interface.

In recent years, some product releases have been made when the products were not actually ready; to prove that this was not the case with Presentation Manager, finished copies of the program were handed out at the press announcement. Despite widespread skepticism that they could make it on time, the shipping package seems stable and performs as Microsoft has been telling the industry that it would.

The product, officially called OS/2 version 1.1, gives users a consistent interface for programs running under OS/2. Like the Macintosh interface, it also gives developers a clear set of guidelines for how their programs should look. As promised, it looked almost identical to Microsoft *Windows*, and many *Windows* developers (as well as main-line MS-DOS developers) were at the announcement showing working products and preliminary versions running under OS/2 with Presentation Manager. Large companies who have been plagued with late products such as Ashton-Tate and Lotus, however, had nothing to show at the convocation, but insisted that they were 100% behind OS/2. Others who displayed working programs include MDBS, Inc., who showed their *Object/1* application generator, and Micrografx, who showed their *Mirrors* technology for porting *Windows* programs to OS/2.

Presentation Manager gives IBM a friendly user interface for their low-end systems that can conceivably be ported to higher-end systems. At the press conference, however, both IBM and Microsoft were cagey about how OS/2 with Presentation Manager will affect other operating systems that they market, especially XENIX. Although IBM

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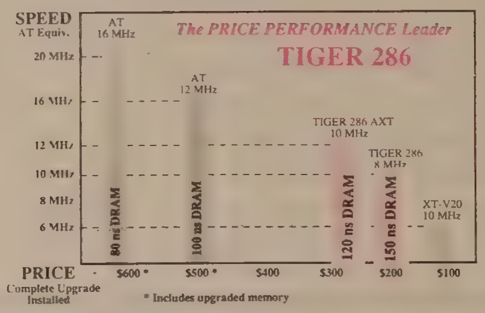
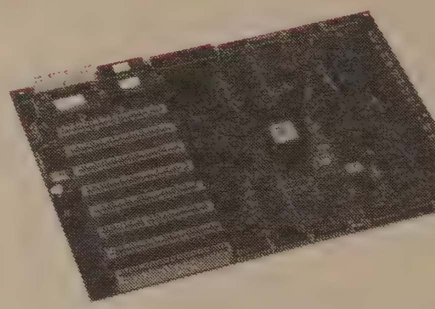


10 MHz BABY AT motherboard upgrade costs will vary from $250 to $500 depending on configuration and installation requirements. Hardware compatibility with existing peripherals cannot be guaranteed.

As a direct replacement for the IBM-XT 8088-based system board, **the TIGER 286 Motherboard is 100% software and hardware compatible.** This board has an 8 MHz 80286 CPU and up to 1 MB of zero wait on-board RAM performance which allows for maximum AT power with existing 150 ns DRAM.

The board design utilizes a custom 68-pin LSI chip which makes TIGER's sleek 80286 architecture compatible with the slower 8088-based units. This unique LSI chip also reduces manufacturing costs which in turn provides PC and XT owners a surprising $200 solution to a $2K problem.



And, there are no hidden costs! Users may keep existing 150 ns memory, keyboard, hard disk, controller and even the same case and power supply in most cases.

The TIGER 286 maintains 100% hardware compatilibity by utilizing eight 8-bit I/O expansion slots. If 16-bit hard disk I/O performance is critical, the TIGER 286 may be configured with 1MB of on-board memory which allows 384K of this memory to be used as **"Intelligent Disk Cache"** that increases performance up to 600%.

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keeps stressing that Presentation Manager is a key part of its Systems Application Architecture (SAA), it hasn't revealed whether the same user interface will be available on systems other than OS/2. Since the original version of OS/2 has sold very poorly so far and very few significant applications have been released, the companies hope that the release of the better user interface will spur interest and corporate sales.

Also, very few monitors and printers are supported by the released version of Presentation Manager, forcing some users to wait until hardware manufacturers can write device drivers (which are more complicated under Presentation Manager than they were under *Windows*). Also, since OS/2 1.1 takes at least four megabytes of memory to perform well, many potential buyers are holding off until memory prices drop significantly.

AT&T-Aligned Vendors Counter OSF

UNIX vendors who remain true to AT&T over the course of UNIX development formed their own group last month to blunt the effectiveness of the Open Systems Foundation (OSF). OSF was formed in order to wrest control of the destiny of UNIX away from AT&T and Sun, who AT&T had made a major player in UNIX development. The new group, which is still without a name but is working as "the Archer Group," is composed of the largest UNIX hardware vendors (NCR and Unisys), as well as many smaller hardware vendors from around the world and some software vendors. One of the main purposes of setting up the Archer Group was to get more positive publicity for the forthcoming Release 4 of AT&T's UNIX, according to its sponsors. Also, since many UNIX users were scared that the OSF UNIX might take many years to put in place, UNIX development might be stymied.

Archer Group members stressed the difference between the Archer Group and OSF by pointing out that the Archer Group would not do any engineering. Instead, they want to create standards for Release 4 software and give AT&T a better method for talking to its vendors. Some large manufacturers have complained that AT&T has not been honest with its vendors about its future plans, but that the formation of the Archer Group will help because AT&T can coordinate its schedule with a single group. The membership is open to all UNIX vendors, they stressed, and it is likely that some of the companies who initially joined OSF will also join the Archer Group.

The two camps took shots at each other, both accusing the other of having an inferior product. The most likely outcome of the mutual bashing is that UNIX growth will be curtailed and that neither side will be able to sell as many UNIX-based systems. The most likely winner in such a situation is IBM, one of the OSF founders, since it already does so well with its proprietary operating systems.

continued

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NEWS
AND ANALYSIS

Chip Industry's Year-End Problems

Most of the news from the chip industry last month was pretty bad, by all accounts. The Semiconductor Industry Association (SIA) said that it expects sales of chips to be low for quite some time, and that its indicator of sales hit its lowest point in three years. National Semiconductor said that it would suffer a significant loss during the quarter, mostly due to soft demand for the specialized chips that it makes. Then, to drive the point home, Advanced Micro Devices, on of the largest chip makers in the area, announced that it would lay off 1000 of its workers in January. AMD blamed the 10% reduction in its US workforce on slackening demand for the 80286, which it produces under a license from Intel. Both companies merged with other chip makers earlier in the year, and thus have a great deal of extra manufacturing capability that needs to be cut back.

AT&T Wins Huge Air Force Contract

In one of the largest contracts ever awarded by the government, AT&T won what could be worth $1 billion in business over the next five years. The contract breathes new life into AT&T's floundering 3B2 series of minicomputers and network software. The Air Force will use the computers purchased on the contract mostly for standard business work and software development. The contract, which required UNIX as the operating system for whichever computer was chosen, was the subject of intense interest in the computer community due to its size and scope. AT&T will be able to pitch systems like the one it sets up for the Air Force on other contracts and will gain a larger software base for the 3B2 series.

Adobe Introduces DEC, IBM Products

Trying to make as big a splash in corporate computing as it has in microcomputers, Adobe recently announced agreements with DEC and IBM that make PostScript available to users of large computers. Adobe's downloadable typefaces will be available for VAX computers running VMS that are hooked to DEC's PostScript printers. The typefaces released include the fonts currently available internal to most PostScript printers including the Apple LaserWriter II family.

In its announcement with IBM, Adobe showed its PostScript interpreter running on a mainframe under the VM/CMS operating system. Users can print on many of IBM's graphics printers, since the interpreter resides in the mainframe. This move opens up a very wide market for Adobe, which has until now focused almost exclusively on the microcomputer and small mini-computer market.

continued

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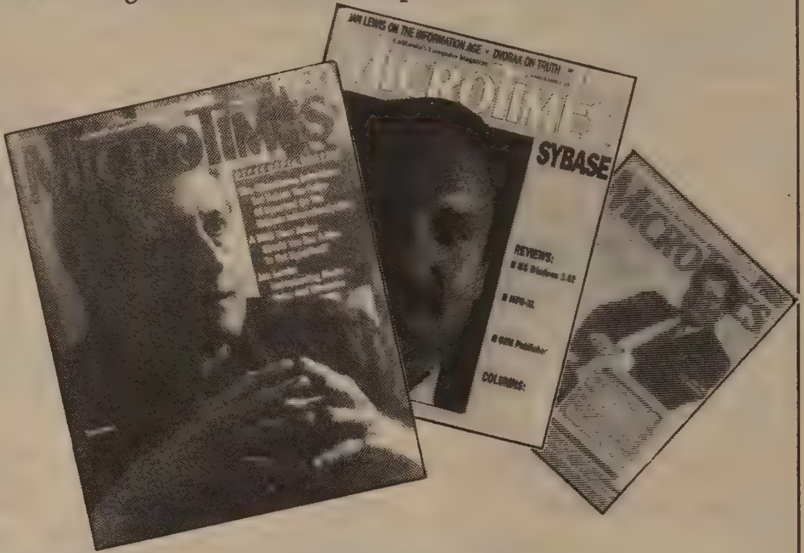
No Other Magazines Were Mentioned!

That's right! In a recent survey, the Copley Newspaper Group asked computer retailers in California, "What Magazines Were Most Popular With Their Customers?"

Here are the results:
1. PC Magazine
2. Byte
3. **MicroTimes**
4. MacUser
5. MacWorld
6. Lotus
7. Infoworld
8. Newsweek
9. Time



That's it. No other magazines were mentioned. Computer hardware and software retailers in California agree—there's only one local magazine their customers depend on. MicroTimes.

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NEWS AND ANALYSIS

New Version Of Microsoft Word For PC

Microsoft announced that version 5 of *Word* will include many desktop publishing features, such as true what-you-see-is-what-you-get editing and full graphics integration into documents. It also includes heavy network support, including better facilities for document review by a group. *Word* version 5 will run under OS/2 version 1.0 (without Presentation Manager) and will take full advantage of the extended memory and process switching under OS/2. The new version will be released at the end of the year, according to Microsoft. Microsoft will market *Word* aggressively against *WordPerfect*, which continues to hold its strong lead in the PC word-processing market.

Calamity On The Internet

Thousands of computers on a national network were slowed to a standstill by a program that chewed up system resources by performing useless tasks and reproducing itself on other systems. As covered in Bennett Falk's UNIX column this issue, the program ran amok on the network by taking advantage of an obscure hole in the mail facility of some UNIX systems. The program belonged to a class of programs called "worms." A worm tries to keep itself alive while crawling through a system, in this case through the Internet network which links universities and Defense Department contractors. Like the more well-known "virus" programs, this worm reproduced, although it passed itself from site to site through a single common break in security.

The national media picked up on the story immediately and, in a surprising display of accuracy, covered many of the related security issues as they described the program and the problems it was causing. After all of the systems on the research network rid themselves of the worm and closed the security hole, many also strengthened their day-to-day security measures. The worm has rekindled a dormant security debate in the computer community, namely how secure networks are. As widespread as the worm was, it only affected Sun and DEC computers on one network, and it did not try to directly damage systems. A more insidious program could have caused much more widespread damage.

Smalltalk Comes To The Mac

Digitalk, the manufacturer of the most widely-used Smalltalk language implementation for the IBM PC, has just released *Smalltalk/V* for the Macintosh. Since many of the parts of the Macintosh interface were picked up from the popular versions of Smalltalk from the early 1980s, it could be said that the language is coming home. Digitalk made it easy to directly port existing *Smalltalk/V* programs to the Mac so that the existing installed base of programs will be available on the Macintosh almost immediately.

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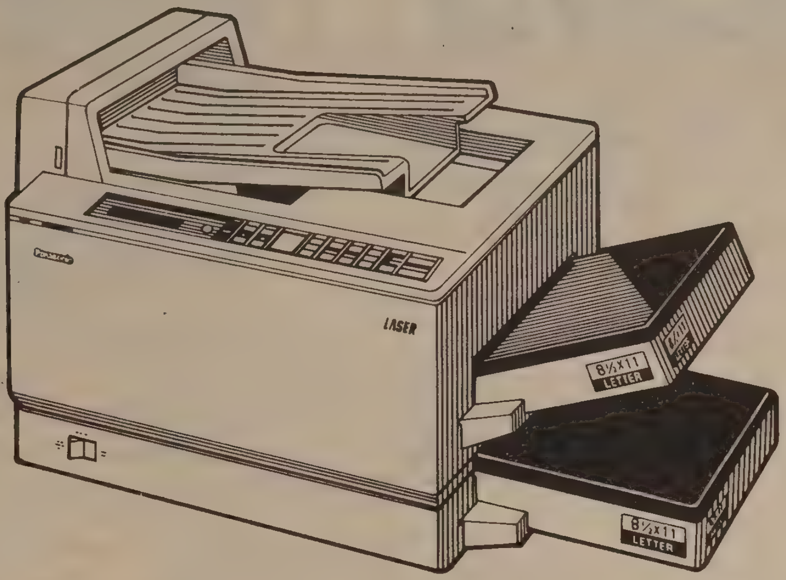

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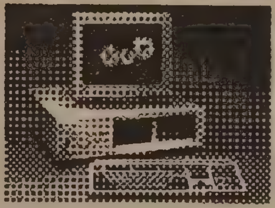

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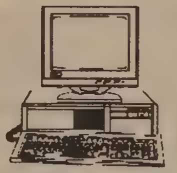

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NEWS
AND ANALYSIS

Nominations Open For Third Fluegelman Award

The third Andrew Fluegelman Award for contribution to software development is open for nominations between now and March 1, 1989. The award recognizes the person or team who creates a piece of software that advances the state of the art in personal computing. Previous winners are Tom Jennings, who created FidoNet; Bill Atkinson, creator of *HyperCard*; and the developers of Aldus *PageMaker*. Andrew Fluegelman developed *PC-Talk* and was the pioneer of Freeware™. For more information about nominations, contact Shirley Gines at 415/546-7722.

Apple's Suit Against Microsoft Gets New Judge

Apple's much-publicized suit against Microsoft is moving faster now that the case has been shifted to the U. S. District Court in San Francisco. Judge William W. Schwarzer will hear motions for summary judgement at the end of January and will rule on them soon thereafter. The judge is deciding whether the case should be heard at all and, if so, whether it should be heard before a jury. Both sides have filed motions indicating that they think that the other side's claims are so weak that the case should immediately go to them. Although this is standard legal posturing, the judge's rulings on these motions will probably give an indication of what will be important during the full trial.

The Touchbase 2496 portable modem combines faxmodem and conventional modem functions and allows transmission speeds up to 9600 baud.

COMDEX '88 Report:

They Left the Blender On Too Long

Very little has changed in the computer industry in the last year. At last year's COMDEX (the annual gathering of the computer industry faithful in Las Vegas), the oft-heard forlorn question was "What have you seen that was exciting?" This year creeping homogeneity in the industry, combined with rampant confusion on the part of users, reached a new high, and the most-asked question became "Have you seen *anything* exciting yet?" All too often, the answer was no.

Even the attempts at creating the illusion of excitement failed, as **Microsoft** and **IBM** attempted to make it seem like every hardware and software manufacturer was just thrilled with **OS/2.** Signs in almost every aisle pointed towards companies who were "supporting" OS/2. Closer inspection, however, revealed that few of the manufacturers who were running the new operating system had any intention of pushing it, citing their fear of the high cost of support and of the huge amount of still-expensive memory that must be sold with it in order for it to run. Likewise, the few software manufacturers who had real OS/2 products or would have them within the next few months were very subdued in their glee over the new operating system. Only those who had announced that their products were a year or more away seemed to think that OS/2 would help out users.

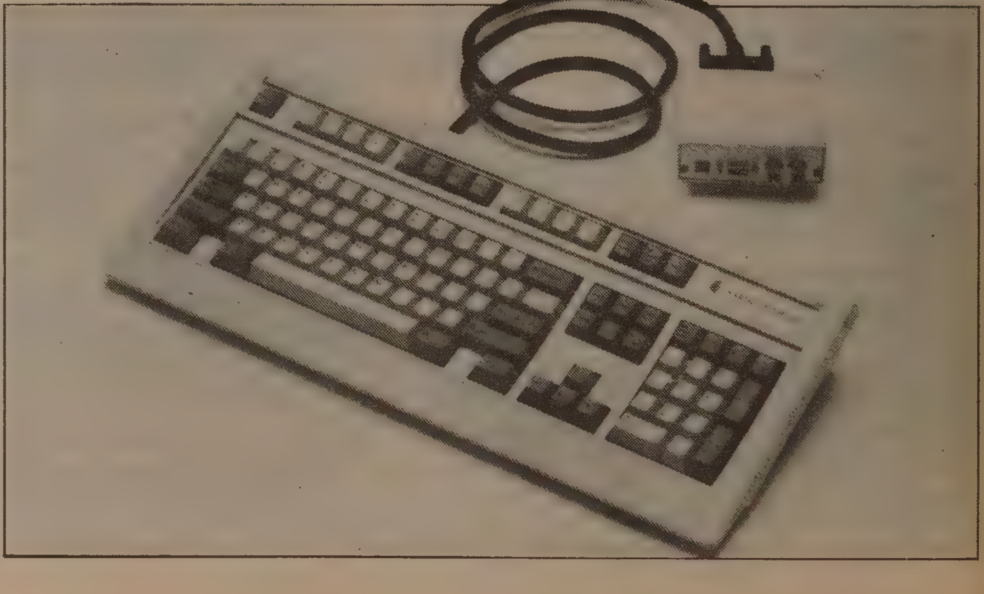
One factor that dampened the enthusiasm for OS/2 is that Microsoft's estimates of how much faster OS/2 programs would run were optimistic, at best. According to Microsoft, database management systems and other software that access the disk often showed good improvement due to the better file system designed into OS/2 but still lacking in MS-DOS, even version 4. However, programs that are large and memory intensive (such as the new OS/2 version of *Agenda* from Lotus) run slower under OS/2 than under MS-DOS. Since very few popular programs run under OS/2 yet, many developers are worried about how important many of the features of the operating system will be. Microsoft also showed its OS/2 LAN Manager software interacting with IBM's OS/2 LAN Server. It also announced that its joint project with Ashton-Tate to develop a database server was behind schedule and would not ship until the middle of next year.

For its part, **IBM** seemed terribly upbeat. Shipments of its **PS/2** line are doing very well, although it admitted that it had supply problems to some dealers during the year. In order to make it seem like software vendors were streaming toward OS/2, it released a list of 800 applications that run under OS/2. Closer inspection revealed that most of them required the RPG II Application Platform, which is only available for IBM systems, not for general OS/2 users. Even then, more than half of the programs in the list were not going to be available for more than six months. IBM also announced that it will meet its deadline by shipping OS/2 LAN Server and Extended Edition 1.1 (with Presentation Manager) by the end of November. It also announced two new faster dot-matrix printers. Separately, **Borland** announced that it would bundle its SideKick for OS/2 with IBM's OS/2 for a limited time.

This year creeping homogeneity in the industry, combined with rampant confusion on the part of users, reached a new high, and the most-asked question became "Have you seen ANYTHING exciting yet?" All too often, the answer was no.

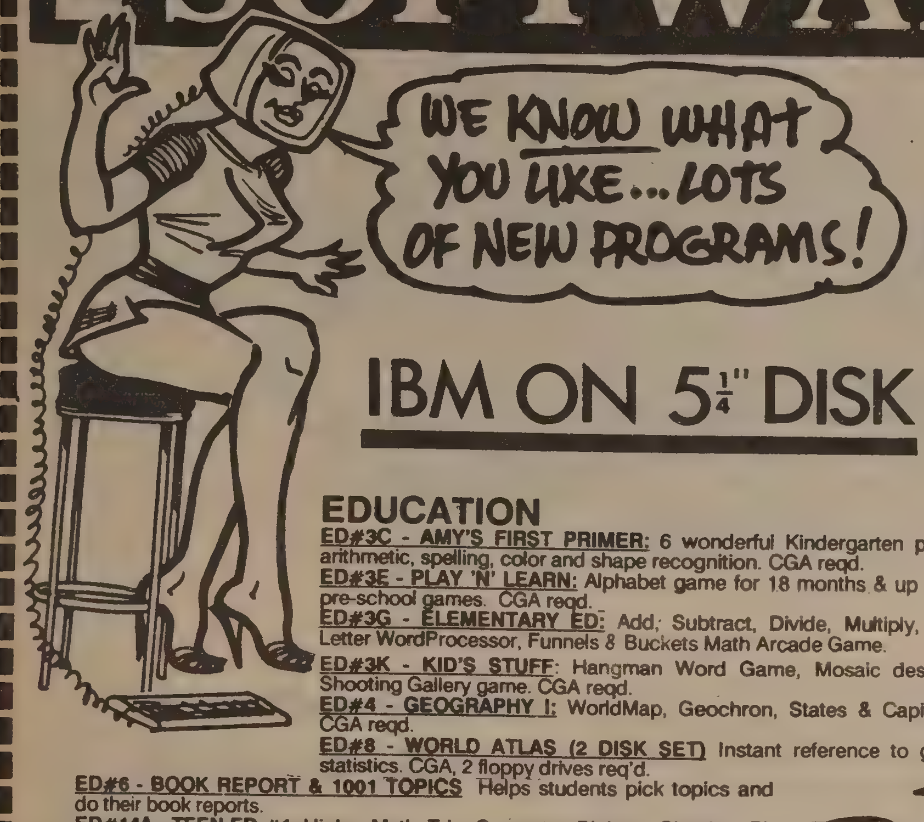
Microsoft also announced that it has created a user interface for **UNIX** that is similar to its Presentation Manager interface for *Windows* and OS/2. The **Common X Interface (CXI)** was codeveloped

continued



The Earthstation-IIe is a compact 286-based diskless workstation.

PdSOFTWAREHOUSE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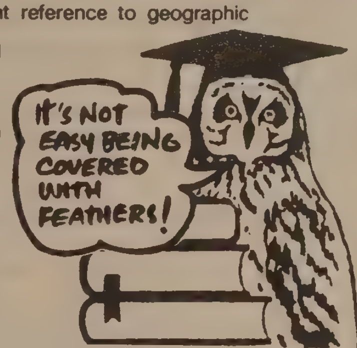
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UT#3 - POWERMENU Excellent, windowed Hard Disk menu organizer.
UT#20 - SECURITY UTILITIES BombSquad, Check-4-Bombs, and other programs to protect your system from Viruses
UT#26 - DISKETTE LABEL Several program that create labels with filespecs for 5.25" and 3.5 diskettes
UT#27 - LASER SOFTFONTS I (2 DISK SET) - Old English, Script, Helvetica, Italic, and many more for HPLJ-II
UT#36 - LASER SOFTFONTS II (2 DISK SET) - Large collection of Times Roman, Centrum, Helvetic in 30-60 point
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EG#1C - EGA GAMES #3: EGA-Scrabble, EGA-Aldo, EGA-Checkers
EG#1D - EGA TREK Intergalactic StarTrek game for EGA
EG#1F - ADVENTURES OF CAPTAIN COMIC "Live action" graphic adventure for EGA.
EG#1H - EGA CHESS High-res 3-dimensional chess game for EGA.
EG#3H - EGA NAGEL ART DEMO Sophisticated art-deco style demo.

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QR#6 BOOK MINDER Complete book cataloging system for you personal library

ADULTS

All purchasers of the following adult programs must be 21 years old and must sign the order form.

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AD#2D - SLIDE SHOW: Sit back & enjoy!

AD#2E - XXX & PIN-UPS: Hot digitized pics!
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AD#2G - ADULT GRAPHICS: Exciting images!
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AD#3A - XXX PRINTMASTER GRAPHICS: 60 XXX images for Printmaster.
AD#3B - XXX PRINTSHOP GRAPHICS: 60 XXX images for Printshop.
AD#4A - VGA PINUPS #1 - Gorgeous girls in high resolution! VGA req'd.
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NEWS AND ANALYSIS

with **Hewlett-Packard**. CXI allows UNIX software developers to create software that looks and feels like software that runs on the PC. The new standard requires the UNIX hardware to support graphics and the X Window System. The system will be available late next year.

Probably the most interesting product on display at COMDEX was not available for sale and would not be available for a year. **Private Eye** from **Reflection Technology** is a tiny computer monitor that can be worn on a headset or pair of glasses. It is 1" x 1.2" x 3.2" and has a resolution of 720 by 280 pixels. The image on the screen is as clear as a regular PC monitor. The tiny screen allows users to have a screen in front of part of one eye, leaving the rest of the field of vision free. Reflection Technology will license the Private Eye technology to a small number of other companies and manufacture units for sale as well. The retail cost of the unit will be under $300, and may be as low as $150.

As always, there were dozens of new IBM PC clones introduced at this year's show. Many companies showed new systems with fast 80386 and 80386 SX CPUs, and many others showed new laptops in a wide variety of power. Laptops with hard disks have gotten lighter, and high-end clones have gotten faster. NEC's new **UltraLite** won the sweepstakes for the thinnest, lightest portable (8.3" x 11.75" x 1.4", 4.4 pounds).

NEC's UltraLite laptop packs AT power into a four-pound portable small enough to fit in a 12" x 9" envelope.

Other Announcements: General

•Reference Software showed its new *Power Pack* for its best-selling *Grammatik III* grammar and style checking software package. The *Power Pack*, which costs $49, makes *Grammatik III* RAM-resident, allows you to edit the writing styles checked in the software, and adds "reading level" statistics.

•Samna introduced the first major word processor for Microsoft *Windows*, *Ami*. The package supports style sheets which allow the user to give formatting commands for general types of paragraphs. It supports a fast text-only mode and a what-you-see-is-what-you-get layout mode. *Ami* comes with a spelling checker, advanced desktop publishing features like kerning and snaking columns, and can use graphics from other *Windows* applications. It costs $199. Samna will offer another package, *Ami Professional*, that has all of *Ami*'s features plus a thesaurus, merged documents, and tables.

•COMDEX isn't all hardware and software. Many vendors show computer furniture, supplies, and so on. One new product that also boasts "desktop capabilities" is a fire-proof safe for your backup floppies and tapes. The Fire-Safe Media file from Sentry Safes holds over 100 diskettes or 50 backup tapes. It maintains an interior temperature below 100 degrees even after a half hour of being in a 1500 degree fire. The Fire-Safe also has a key lock for prevention of theft.

•XTree announced versions of the *XTree* file management program for the Macintosh and Novell LANs. *XTree* is a popular program that helps you see the structure of the directories on your disk and to move and organize files. The new packages have many of the same features of the the PC version. *XTree/Mac* costs $99 and *XTreeNet* costs $395.

•Softbridge Microsystems introduced Bridge/386, an interactive language for creating multitasking macro and batch control processes. Bridge/386 lets you write scripts for automatic inter-program communication, such as between a data-capturing program and an analysis program. It works with all standard MS-DOS and *Windows* programs.

•Now that versions of *WordPerfect* exist on nearly every type of microcomputer, WordPerfect Corporation has branched out into mainframe environments. They announced a new version of *WordPerfect* for IBM 370-class computers running the VM/CMS operating system. *WordPerfect* for the 370 is essentially the same as Version 4.2 for the IBM PC, except that it runs on 3270 terminals and can read and write files in EBCDIC, RFTDCA, and FFTDCA formats. The program looks and feels like an amalgam of classic *WordPerfect* and standard 3270-based programs.

•Hitachi showed two new CD-ROM readers with much faster access times than their previous models. The new readers fit in a half-height slot of a PC and have a random access time of .35 seconds, which is more than twice as fast as most CD-ROM readers. In addition, the new drives have 32K of RAM buffer for better performance and can be mounted either horizontally or vertically, so they work in systems which are turned on their sides.

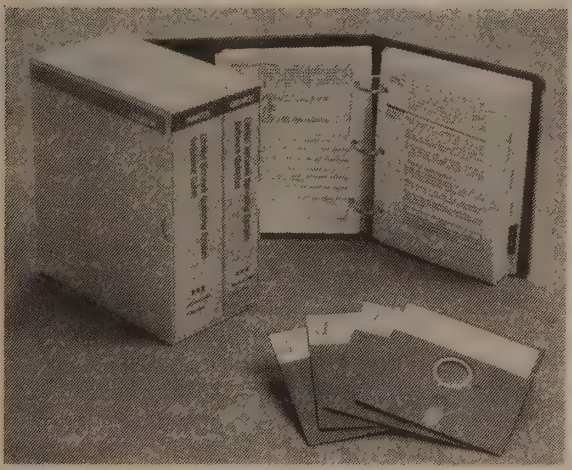
•Earth Computer Technologies showed a diskless workstation that was no bigger than a standard keyboard. The Earthstation-IIe is an 80286 with 512K, all standard video modes, a 10 megabit Ethernet interface, and a parallel and serial port. It is housed in a standard 101-style keyboard with a small box attached by cable for the Ethernet coax and monitor. It can run with Novell, Network/OS, and NetBIOS-compatible operating systems. Its small size makes it very useful in areas with limited space.

The few software manufacturers who had real OS/2 products or would have them within the next few months were very subdued in their glee over the new operating system. Only those who had announced that their products were a year or more away seemed to think that OS/2 would help

•Information Research introduced *Syzygy*, a new groupware tool for project planning and organization. It allows members of a group to view and add to projects in a hierarchical fashion. *Syzygy* uses Gantt charts as the organizing principle, and can create calendars and to-do lists from the project. It can also be used as a meeting scheduler for departments. It can read and write files compatible with personal information handlers like *Agenda* and *GrandView*. The single-user version costs $395,

continued

The New High Performance Challenger in Local Area Networks



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UNIVATION

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Computer System	MIPS	Landmark	Norton SI
Everex STEP 386/25	**6.1**	**41.0**	**31.1**
IBM Model 70 (25 MHz)	5.7	NA	NA
Compaq Deskpro 386/25	5.5	40.7	30.5
Everex STEP 386/20	**4.9**	**32.8**	**24.3**
Compaq Deskpro 386/20	4.6	32.5	24.2
Everex STEP 286/20	**4.2**	**27.4**	**23.0**
Everex 386/16	**3.9**	**26.2**	**19.5**
IBM Model 70/80 (20 MHz)	3.5	24.7	22.0
Everex STEP 386is	**3.2**	**21.0**	**17.6**
Everex STEP 286/16	**3.2**	**21.0**	**18.0**
AST Premium 386/20	3.1	19.6	21.0
Wyse 386/16	3.0	20.0	17.6
Acer 386/16	3.0	20.0	16.2
Compaq Deskpro 386	2.9	19.0	17.6
IMB Model 70/80 (16MHz)	2.9	18.0	17.6
Compaq Deskpro 386s	2.5	15.4	12.5
Everex STEP 286/12	**2.5**	**15.7**	**13.7**
AST Premium 286	2.0	12.7	11.1
Compaq Deskpro 286	1.9	11.7	11.5
IBM Model 50z	2.0	12.8	11.2

The Database Group Power Meter MIPS version 1.2 Landmark benchmark version 1.10 Norton Advanced Utilities System Information
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80286 CPU, 1.2MB Floppy, 512K Memory, 101 Keyboard, FL/HD Controller, 6/8/10 Kbrd Selectable, 195 Watt Power Supply, Optional 80287 Socket, FCC UL Aproved.

8MHz '1' Wait State 80286 Mono System	$990
10MHz '1' Wait State 80286 Mono System	$1395
10MHz '0' Wait State 80286 Mono System	$1495
12MHz '0' Wait State 80286 Mono System w/ 1MB mem	$1725

386 System-Model 3000A

80386 CPU, 1.2MB Floppy, 1MB Memory, 101 Keyboard, FL/HD Controller, 64 Cache, 16MHz CPU '0' Wait State, 195 Watt Power Supply.

16MHz '0' Wait State 80386 Mono System	$2225

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20MB 65ms	$249
40MB 39ms	$399
80MB 28ms	$695
144MB 16.5ms	$1795

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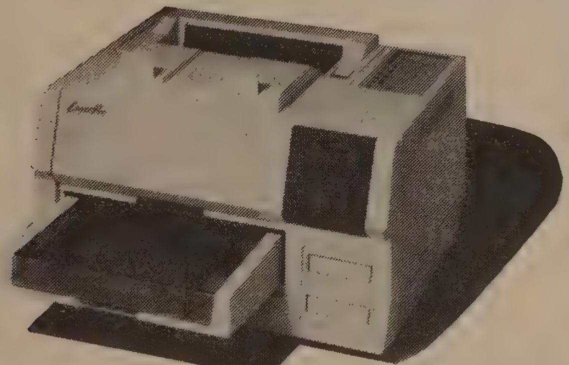

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  Less waiting time for pages to print.

while the network versions cost $595 for two users, $995 for 3 to 10 users; an unlimited license for one server is $1995.

Fax News

•Ricoh showed a peripheral that allows both computers and fax machines to work more closely together. The DX-1 allows a standard fax machine to work both as a scanner and a printer for any computer. Many offices have fax machines but no scanners, and this gives users a method for scanning documents for graphics or text. Attached to a computer, the DX-1 acts as a standard fax, receiving and sending device at 19,200 baud.

•Touchbase Systems introduced a tiny portable 9600 baud fax/modem combination. The Model 2496 works just like standard PC fax attachments and modems, but it is only 5" x 2.75" x 1". It can also be used with Tandy acoustic couplers, so that you do not need to be near a modular phone to use it. The unit costs $699 and will be available early next year.

•Quadram announced as PS/2 version of its popular JT Fax line. The JT Fax PS/Q board retails for $595 and is one of the first fax boards available for the PS/2.

New Printers

•Tektronix showed the Phaser CP color printer that can be use as both a color PostScript printer or as an HPGL printer. It uses 300 dots-per-inch thermal wax transfer. They also showed the Phaser LP black-and-white system for B-size or tabloid (11" x 17") printing. Each comes with 35 PostScript fonts resident in the controller, the Phaser Card. The controller also works with current Tektronics thermal wax printers. The Phaser CP is $6000, the Phaser LP is $3000, and the Phaser Card is $6995.

•Toshiba introduced a portable 24-pin printer that weighs only four pounds. The ExpressWriter 301 is designed to go with portable computers. It prints in near-letter-quality mode at 42 characters per second and costs $489.

•Genicom announced two printers with 400 dot-per-inch resolution and eight page-per-minute engines. Both emulate the Hewlett-Packard LaserJet II, IBM Graphics Printers, Diablo 630, and include Genicom's ACE page description language. The 6140 has 1 megabyte of RAM and costs $4295; the 6142 has 3 megabytes and costs $4895.

•Mannesmann Tally showed their new MT81 dot matrix printer which costs $199 and prints at 130 characters per second in draft mode. The printer can also produce intermediate-quality printing. They also showed their new MT905 laser printer that is compatible with the Hewlett-Packard LaserJet II but lists for $1995. ■

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REALIZABLE FANTASIES • BY JIM WARREN

Big Budgets, Better Home Phones, Multi-Use Monitors And Memorable Mirrors

This technojunkies' talk-show offers digital daydreams—"fantasies" only because someone's not implemented them. So—do it!

A Nation's Real Game

To prove(?) how easily we could do what Congress and the White House can't do, we need this game!

It seems that the National Economic Commission has developed a budget-balancing computer "game"—but this is a "real" game for the Washington moguls to use. The NEC is a panel established by the federal legislative and executive branches to propose a deficit-reduction plan for the next administration.

Well, I think they should release this game/model/mega-spreadsheet for use by the people who are paying for it. Of course, *we* know how to balance the budget and cancel the deficit—we just tax less while providing more services we want. For an interesting writeup describing the game and some of the problems, read "The Deficit Game," an October article by the *Washington Post*'s Paul Blustein.

Consumer Phones With Commercial Phone Capabilities

Many of us have all sorts of features and options on our computer gear, our video gear and our audio gear. But although we may have multiple phone lines, our residential phone systems don't make it.

There should be reliable home phone systems—priced for consumers—that allow multiple trunks (phone lines) and multiple stations (any of the normal phones found in a home). By using the digits "#" and "*," any user at any station should be able to place an incoming trunk call on hold, forward it to another station, dial any other station, attach or detach other stations from a shared call, redirect all calls for one station (e.g., the den) to another station (e.g. the refrigerator), direct any trunk to ring on any one or several stations, etc.

They should also be able to dial up a listening station (e.g.,, next to a baby's crib or inside an insecure distant garage), or patch into a paging circuit feeding a low-power amp connected to some paging speakers hither and yon.

These are only a few of the options available in small commercial systems—that are wildly overpriced for the technology and components they contain.

Copyright © 1988 by Jim Warren. All rights reserved. Jim Warren founded the West Coast Computer Faire, the Silicon Gulch Gazette *and* Infoworld *newspapers, Video Initiative and the DataCast proposal for broadcast-based paperless electronic newspapers utilizing personal computers. He was the founding host of the PBS* Computer Chronicles *series, founding editor of* Dr. Dobb's Journal, *and founding president of the Microcomputer Industry Trade Association.*

Please note that, although this is user programmable—hopefully, very programmable—it does not require a general-purpose [micro]computer. Equally important: It allows consumers to use any of the available handsets ("phones") they desire. It's simply a box that listens to Touch-Tone bleeps and/or rotary-dial pulses—which it may treat as switching commands or pass through to a phone trunk or other "output" line.

Which reader will be first to make a fortune in this massive consumer market?

Intelligent Listeners

Pete Maclean of San Francisco proposes additional phone phantasies:

Let's have phone answering machines similar to traditional answering machines, but with a computer interface or two. They would allow users to download control sequences and [un]digitized outgoing messages (e.g., messages that automatically change during the day or week). It would also allow callers knowing Touch-Tone command sequences to access different messages, stored voice-mail, etc.

Incoming messages could be digitized and fed to the computer (for *HyperCard* processing?) and stored as home computers' voice-mail (disks permitting).

Now, Pete's best suggestion: Have this intelligent answering machine briefly beep like it was an auto-answer modem. If it heard a computer beep back, it would transfer the call to the owner's computer modem port; if it heard a fax machine's signal, it would transfer the call to the fax port; other calls would be presumed human.

Mirrors With Memory

Motorized automobile mirrors should have memory, according to Bob Richey of Concord, California. Then, they could adjust themselves to different drivers—as any modern machine should.

May as well have car seats do the same thing—in which case users should be able to identify themselves upon opening the door, so tall folks can conveniently readjust seats that short folks have squished forward.

Multi-Sync Monitors' Multi-Uses

OK—So many computer monitors now adjust to several different form factors, e.g., VGA, EGA, CGA, etc. These produce outstanding high-resolution color images. Some even permit control over the shading and brightness of each pixel.

So, its time to add an optional television-signal tuner-receiver. It should receive a regular television broadcast signal, convert and adjust it to one of those hi-res monitors' better form factors—with line averaging, scan buffering and interleave unwinding, as needed—and output a signal in a form the monitors can accept. That way, computer folks who prefer their escape literature in video form rather than printed form can use their big, expensive, hi-res monitor to view computer gibberish and television gibberish.

There should be reliable home phone systems—priced for consumers—that allow multiple phone lines and multiple stations. By using the digits "#" and "*," any user at any station should be able to place an incoming trunk call on hold, forward it to another station, etc.

Quickies

Mark Gunther, the General Manager of MIX Publications, suggests foot switches—on the left for the "Ctrl" and "Alt" keys, and on the right for mouse clickers.

Jim Lyle of Campbell suggests there should be a CBBS—computer bulletin board service—providing multiple listing services for used cars. Perhaps it could even offer multiple cross-indexing by make, model, price, alleged conditions, geographic area, etc.

[Jim also wants spoon-shaped tortilla chips, sturdy enough to lift salsa and veggies—but I can't figure out how to justify including that in a computer column, so you are to skip this sentence.]

Mental Wandering: Why, Daddy?

Psychological researchers, please explain:

Why are so many engineers morning people and so many programmers night people?

Why are so many programmers so enchanted with double entendre, adventurous alliteration, and wildly wandering word-warping? It's creative symbol manipulation, but is there more to it? (Why, yes, I'm a programmer—how'd you ever guess?)

Fellow Fantasizers—Do!

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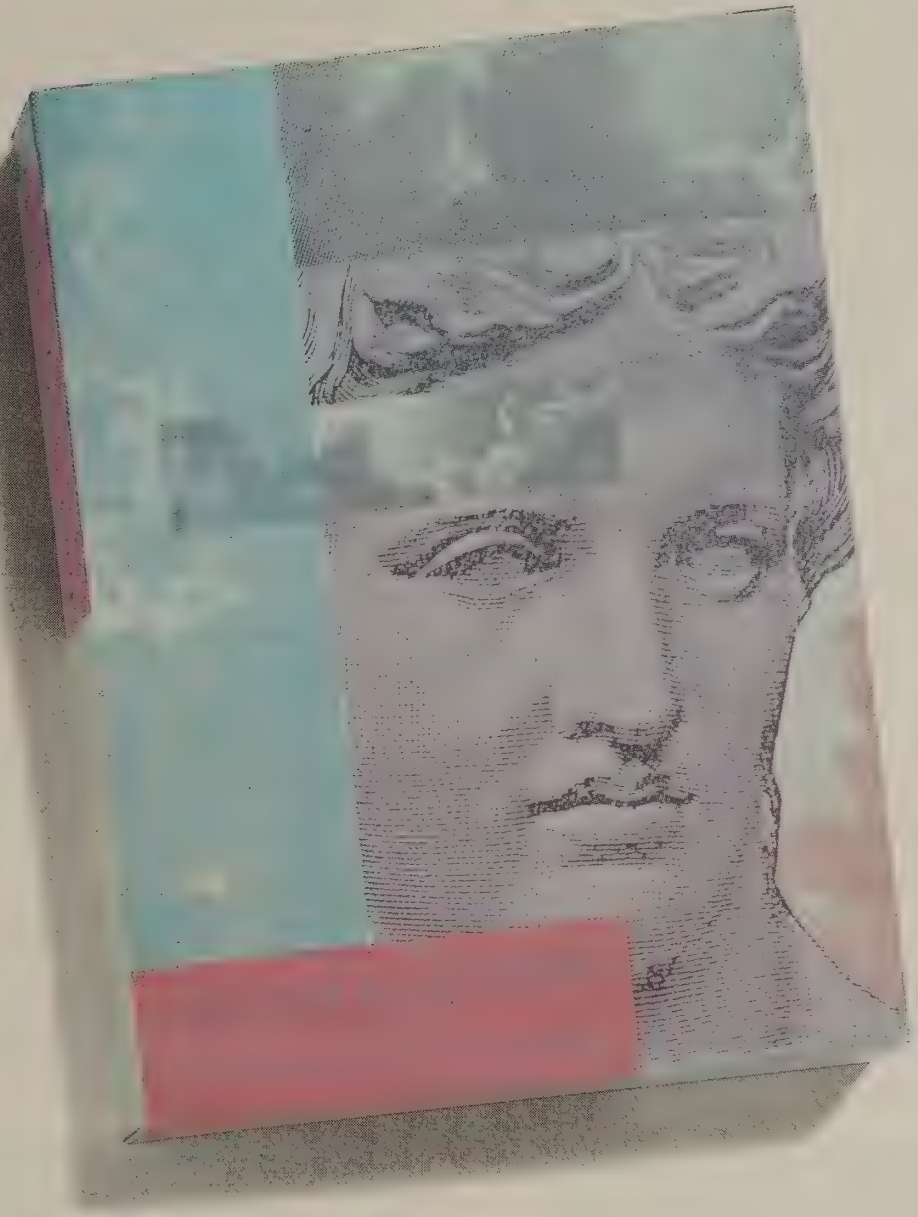

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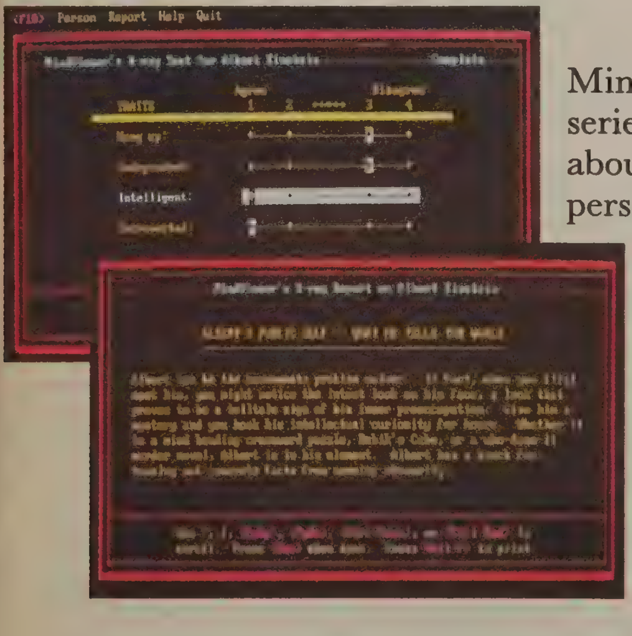

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INDUSTRY ISSUES • BY SCOTT KRONICK

Apple: The Thrill Is Gone

In his book, *Odyssey: Pepsi to Apple*, John Sculley seems to want you to believe his pioneering is in a league with Thomas Edison, but the accomplishments he lists are more in line with those of Betty Crocker. The book is more about the building of a corporate empire than about advancing science. It reflects a company ideology geared more to "look and feel" lawsuits than to computer innovation.

At the book's climax, Sculley's wife Leezy, who has confronted Steve Jobs outside the Good Earth restaurant, says: *When I look into most people's eyes, I see a soul. When I look into your eyes, I see a bottomless pit, an empty hole, a dead zone.*

That's not a very nice thing to say about the man who orchestrated two leaps in computer technology: the Apple II and the Macintosh. Since Jobs's departure, Apple has produced incrementally, including a Mac SE ROM chip that contains 80K of blank space and a costly Mac II that distinguishes itself from an IBM product primarily with software derived from the original 128K Mac.

The odds still favor Apple—at least until the day Bill Atkinson and his undiscovered counterparts find that the magic begun by Wozniak is gone, the Macintosh Toolbox is dated and Apple's idea of stimulating growth is initiating look-and-feel lawsuits.

Jobs built the Macintosh using a handful of new wave wizards who had been drawn to Cupertino by the magic of Steve Wozniak. Jobs told the new wizards to make a computer that would be loved. He promised that no corporate sludge would seep beneath their office doors and muck their creation.

Apple has succeeded at reaping the profits of Wozniak's and Jobs's artwork. *Odyssey* tells the first-person story of how a pleasant and proficient businessman became a competent reaper. The book is personal, engaging and an accessible marketing text.

Yet between the lines describing the ouster of Jobs, the book tells the story of product decision-makers who produce sad compromises. In ballyhooing managerial rationales for increased sales, the book rings falser than a late-night UHF evangelist selling Medicare supplements.

Odyssey fails to capture the spirit that made Apple attract incredible talent. It fails to describe the energy and rebelliousness of the engineering environment that produced such superior computers. It fails to illuminate the technological genius that has led to Apple's current prosperity.

The post-Jobs Apple has not shown the ability to create artistic magnificence. Wozniak produced the Apple II single-handedly. Jobs's ten-person pirate team produced the Macintosh. But the recent Apple has not yet forged art with small teams of engineering artists.

•••

Then there is *HyperCard*. Bill Atkinson makes the best personal computer software in the world. He has chosen Apple Computer as his software publishing company because Apple can get his artwork into the world better than anyone else. *HyperCard*, developed by Atkinson outside of Apple's corporate walls, is bundled with every new Macintosh.

So where's the rub? Sure, Atkinson had to battle with the American corporate superstructure. But he won. He got John Sculley to side with him. *HyperCard*, Apple's edge on the future, has skidded past the sludge and into disk drives.

Except *HyperCard* isn't done yet, and it's more than a software application. The buttons, fields and scripts in *HyperCard* might find their way into Apple's next Finder. The way people interact with *HyperCard* is roughly the way people will interact with the next new personal computer.

So Bill Atkinson's battle is ongoing. Maybe he will lose and the next great computer won't be from Apple. Steve Jobs would agree to marry Mother Teresa in exchange for NeXT outselling Apple's next. Yet the odds still favor Apple—at least until the day Bill Atkinson and his undiscovered counterparts find that the magic begun by Wozniak is gone, the Macintosh Toolbox is dated, and Apple's idea of stimulating growth is initiating look-and-feel lawsuits.

The direction of Apple Computer is a personal, emotional issue for more than employees and stockholders. A sub-culture has embraced personal computers—mind-expanding yet easy on the lungs. Individualists see the computer's potential to lever government and corporate bigness, gobs of knowledge too easily stored and retrieved for any bureaucracy to hog and protect.

IBMs work fine for big spreadsheets, but sociological change requires artistic magnificence. Consumers want to know what Apple executives are doing to keep the Apple magic alive besides hawking their predecessors' artwork like caramel-colored sugar water.

IBMs work fine for big spreadsheets, but sociological change requires artistic magnificence. Consumers want to know what Apple executives are doing to keep the Apple magic alive besides hawking their predecessors' artwork like caramel-colored sugar water.

Apple became one of the 200 largest corporations primarily as a result of the superior technological skills of less than twelve people. Most are gone. Atkinson remains. If there are other superior newcomers in the ranks, there may be no one at Apple like Jobs to identify and empower them. The talented will be lost among the hordes of sloppy code-crunchers and chip-solderers. Apple has lost the services of most of its talented Macintosh team because it has devastated the appropriate work environment.

The creation and copyrights of the Macintosh ensure Apple's financial success for many years to come. But without a change, Apple of the 1990s will become just another fat corporate monolith making expensive computers for their fat corporate peers.

Let the author of *Odyssey* start playing the role of a Jobs, of a man who orchestrates a computer that can change the world. For all the success and corporate acceptance of the Macintosh, Sculley is not yet an Edison and not yet a Jobs. ■

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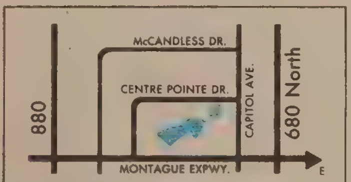

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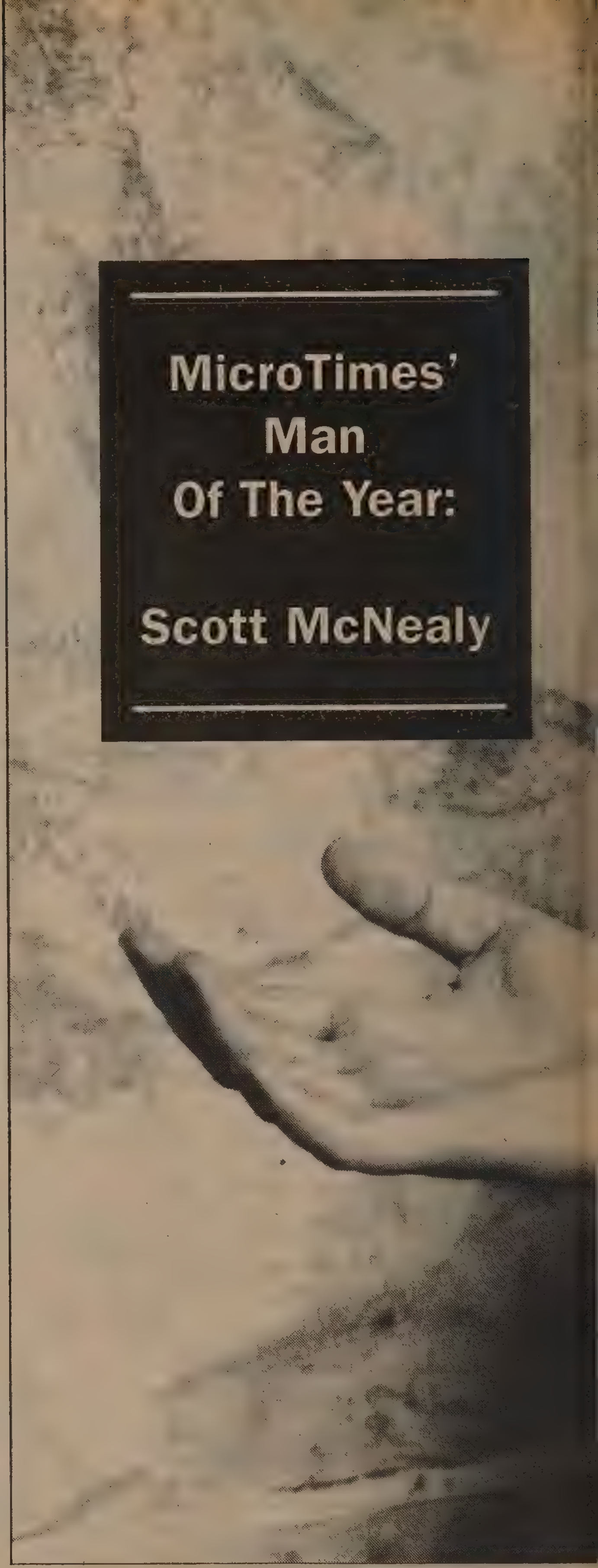
The World According To Sun

President/CEO Scott McNealy Sets The Record Straight

By Mary Eisenhart
and Steve Guttman

Photo: Michael Jay



MicroTimes' Man Of The Year:

Scott McNealy

A typical problem that people have when they work with other people is that they're afraid that people will steal part of their revenue. It's sort of like being a little kid and wanting to eat everything and not sharing. But that's how you make friends, and friends are useful, in that business is really done on the basis of personal and business relationships that work well.

—Bill Joy

There has been a severe "disconnect" between what computer customers want and what most computer vendors are willing to sell, creating an extraordinary opportunity for Sun and others to respond.

With 99 percent of the general-purpose computer market still untouched by Sun, our employees recognize that far greater challenges lie ahead.

—1988 Annual Report, Sun Microsystems

It would be easy to accuse Sun Microsystems of delusions of grandeur, if it weren't for its impressive track record. It would be easy to accuse its leaders of arrogance, considering their penchant for taking potshots at the rest of the industry, if it weren't for the fact that they're often merely pointing out the emperor's unclothed state. The sweeping statements to which Sun executives are so partial suggest less a company on a mission from God than a company which can't quite figure out why the rest of the industry doesn't do something which obviously *works*. Especially since Sun people seem to be having so much *fun* all the way to the bank...

In 1982, Sun Microsystems was founded with $4 million in venture capital by hardware innovator Andreas Bechtolsheim (whose work on the Stanford University Network gave the company its name), software wizard Bill Joy (one of the primary architects of Berkeley UNIX), Vinod Khosla and Scott McNealy. Their plan, as Joy told *MicroTimes* last year (Issue #34, August 1987) was "to build a full-fledged computer company based on microprocessor technology."

This year Sun, which has roughly doubled its earnings every year of its existence, had its first billion-dollar year. Its phenomenal growth has been spurred by an obsession with technical excellence coupled with fundamental principles: adherence to industry standards, open architecture and cooperation with outside vendors. Part of Sun's commitment to openness and strategic alliances undoubtedly arose from the ingrained "Live Free Or Die" philosophy of UNIX itself, which came into existence in response to monolithic computer companies who locked customers into using proprietary hardware and software from the same vendors; under UNIX, if you didn't like the job Company A's machine was doing for your business, it was an easy matter to buy hardware from Company B which ran the same software.

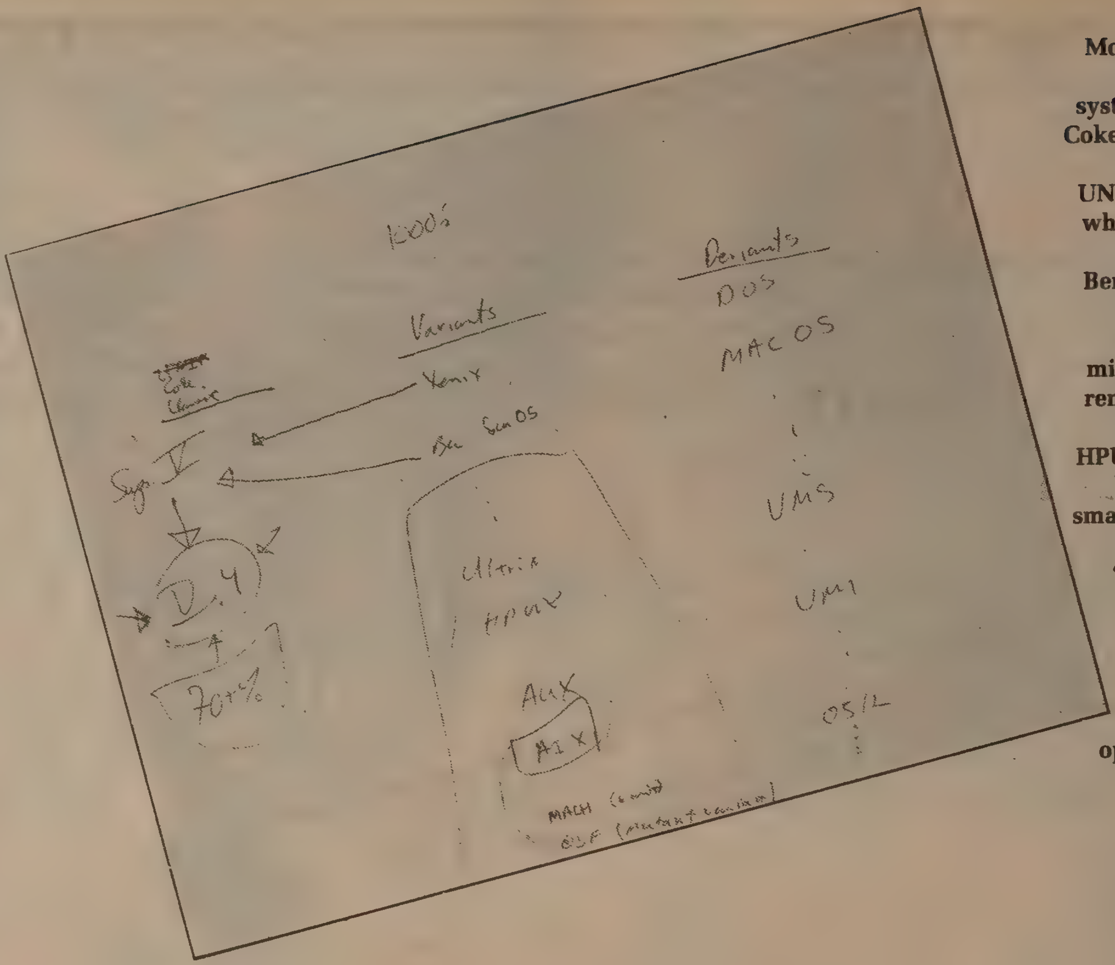
Another part arose from what Sun regularly insists is no more than common sense. Any Sun presentation is likely to culminate with a variant on standard Sun themes: companies dependent on proprietary technology are doomed; adherence to industry-wide standards and cooperation among vendors insures prosperity for all concerned.

Not only is Sun currently experiencing megagrowth, it's spent the last year positioning itself for an even more spectacular future. In the connectivity area, it's continued to develop and support TOPS networking technology, which it acquired last year and which allows Macs, PCs and UNIX machines to exchange files on a network. Following last year's dramatic price reduction of its 3/50 workstation, which had the effect of giving a whole new range of options to the would-be Mac II or 386 buyer, it introduced the phenomenally successful 386i, which runs DOS applications in a window within a UNIX environment. The 386i was also a first for Sun in that it was based on Intel's 80386 microprocessor, in contrast to its historically Motorola-based product line.

Sun also introduced a line of high-end workstations, the Sun-4 series, based on its own implementation of RISC (Reduced Instruction Set Computing) technology. Called SPARC (Scalable Process ARChitecture), the standard has been adopted by several leading chip manufacturers and stands a good chance of becoming predominant in the RISC arena.

In what may be the most significant move of all, Sun also announced a major strategic alliance with AT&T, under which the two dominant varieties of UNIX, Berkeley and AT&T's System V, would be united in a single standard to be known as V.4. Further, in a move perceived as a direct threat to Apple, which was hard at work trying to get the Mac interface to work with A/UX, and Microsoft/IBM, trying to bring OS/2 and Presentation Manager from the realms of vapor, the two companies announced a joint venture in developing yet another windowing interface: Open Look (see "AT&T Opens The Windows," *MicroTimes* issue #44, June 1988). Based on Xerox PARC graphical-interface technology, Open Look promises to deliver intuitive ease of use combined with the power of UNIX.

While the alliance offered obvious advantages to Sun and AT&T and promised to make life easier and more productive for their customers, it brought howls of outrage from hardware vendors like IBM, DEC and Hewlett-Packard, who license their own UNIX dialects from AT&T and perceived it as giving the two companies a virtual monopoly in the UNIX marketplace. The upshot of this was the formation of the Open Software Foundation, a group of hardware vendors who committed themselves and their resources to the development of an alternate UNIX standard, to be based on IBM's AIX. There ensued something of a scramble for market- and mindshare among software vendors as OSF tried to convince them to develop applications for its environment rather than V.4. Subsequently, vendors loyal to the AT&T-Sun standard formed their own support organization, still unnamed but currently calling itself "The Archer Group." (See News and Analysis, this issue.)



McNealy's diagram of the operating system world: in the Coke Classic column, AT&T System V UNIX, the standard, which will incorporate XENIX and Berkeley UNIX/Sun OS into the V.4 standard. In the middle column, the remaining variants, including Ultrix, HPUX, and A/UX, to say nothing of smaller variants like Mach and the "mutant variant" OSF. And finally, in the Deviant column, all those other operating systems, most of them proprietary: DOS, Mac, VMS, OS/@, etc.

Sun, meanwhile, continues on an aggressive pursuit of excellence, spending 13% of its revenues on research and development, compared to the 8% industry average. "At any time," says McNealy in the 1988 Annual Report, "Sun may have dozens of widely varying R&D projects under way, occupying well over a thousand engineers."

*****

The 33-year-old son of an American Motors vice president, Scott McNealy has been president, chairman and CEO at Sun for most of the company's existence. His credentials include a degree in economics from Harvard and a Stanford MBA; he's at once an effective executive in whose presence AT&T honchos tend to be positively deferential and a fun-loving golf and hockey enthusiast who remains Sun's chief cheerleader.

An animated speaker, McNealy tends to make his points forcefully and with an utterly Sun-like sense of "Isn't it *obvious*?" When we got to talking about the AT&T alliance, he reached for a tablet and scribbled a diagram of the current state of the UNIX market, with a glorious future for V.4 UNIX and trouble ahead for obscure variants like OSF and the Mach operating system of the NeXT machine.

Given Sun's performance the past few years, there's a pretty good chance he's right.

Just to review some ancient history, how did you get involved with this gang of 8000 anyway?

The whole genesis of the thing basically started with a couple of engineering projects funded by universities and government grants. One was Andy Bechtolsheim's work on the Stanford University Network and Sun workstation, and Bill Joy's work for DARPA on the Berkeley version of UNIX. And then we had a couple of business school students that became close friends, myself and Vinod Khosla. Vinod was out looking to go do a startup; he met up with Andy and said, "Let's go make a computer company out of this."

I was, at the time, director of operations for Onyx, which was a company making UNIX minicomputers in the Valley. The two of them came over and visited me, and I said, "Well, let's go talk to this venture capitalist." One thing led to another and pretty soon Vinod said, "Well, you're going to quit your job, aren't you?" I said, "I'm getting paid lots of money—why would I do that?" He said, "You can't back out on me now!" So really, with no more than about 24 hours' thought, I quit my job, joined them, and we went up and recruited Bill Joy from Berkeley. That was back in the February - March time frame of 1982. The rest is history, I guess.

Open architecture is important to

Scott McNealy of Sun: "If you look at the two fastest growing computer companies ever in the history of the world, it's Compaq and Sun, both of whom are dedicated to building cloneable computers."

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Sun; how does that affect the way you compete in the marketplace?

Well, I came from the automobile industry, where if you bought a Ford, you didn't have to buy a Ford for your next automobile. You really locked the customer in through customer satisfaction, and reliability and quality, and price/performance, and marketing, and styling and distribution channels — all those other things. You didn't lock them in to the way the car operated, or the kind of fuel it used, or the roads it drove on.

If you go back to the '82 - '83 time frame, a lot of computer companies were complaining because their computers wouldn't talk to other computers, and they were all confused that no one vendor could supply the whole range from bicycle to Boeing 747 in terms of their communication needs. And there's an absolutely fundamental shift that's going on in the computer business. If you look at the two fastest growing computer companies ever in the history of the world, it's Compaq and Sun, both of whom are dedicated to building cloneable computers.

Doesn't that mean that you have to stay a couple of steps ahead of your competition?

Just like Ford! Ford is a wildly successful company. And I hope to be that "unsuccessful" and face those kind of competitive pressures someday. I hope to be that big someday.

I'll tell you what—you can't go very long in any industry, any place, anywhere, and not be a couple of steps ahead of your competition in price/performance, quality, reliability, distribution, marketing, all of those things. People are always looking for that magic little business where you don't face competition and you can make wild, crazy profits. It doesn't exist! There's no free lunch!

"We have a saying around here: 'Goals only limit you.'"

I appreciate your asking that. That's always the classic response to, "Well, so you're building cloneable computers, aren't you going to have to face competition?" Compaq has more than faced it, and their products are much more cloneable than ours; much more cloneable than an automobile. You can build a Compaq clone; in about six weeks you can be shipping. You can't do that with an automobile.

Does that mean that one of the primary dimensions that you're competing on is technology—staying at the forefront?

We're spending 13-, 14-, even as much as 15% of our sales dollars on our R & D budget to build new, better, faster, smaller, more capable, state-of-the-art machines. That percentage is far above the industry average in terms of investment in new product and new technologies.

You said that you'd like to be as big as Ford someday.

Well, that's already taken out of context. I just used it as an example. It's not a goal. We have a saying around here: "Goals only limit you."

It would be highly misrepresentative of the company to put a statement up that says "Sun wants to be this big," or whatever. What Sun really wants to be is respected, successful, highly ethical, a fun place to work. The kind of place where you're proud to go to the outside world and meet some of your friends, and they ask you where you work, and when you say, "I work at Sun Microsystems," they go, "Oh, wow. That's neat." That's a more important goal here. I think a by-product of that is growth, profits and all the rest of it.

At the same time, the growth and the profits create their own problems in a way. It's easy to hold onto that edge when you're a small, little guerrilla company, but when you're taking over Mountain View...

I don't know how to deal with it! You can't win with the world, right? You go be open, and you get a chance to lose, and people say, "Well, now you might lose to the clone manufacturers." You grow, and now they go, "Oh gosh, now you've got growth problems."

Well, I'll tell you what. I'd rather be wondering where I'm going to get my next person as opposed to wondering who I'm going to lay off, or what project I'm going to cut because we're *not* growing. So, you've got to pick and choose your problems. We happen to think that growth and being able to lose are much better problems than being totally locked out. If you look at a company like a Data General, there's one built on proprietary architectures that doesn't even get to lose. And they're facing the other problem — not the problem of growth.

But take, for example, Apple. Everything is getting very chaotic, they're hiring people faster than they can train them, employees are demoralized by the constant reorganizations, they've got executives feuding with each other... So, how do you propose to avoid falling into that pit, because it's a very natural pit to fall into?

I think Sun has a foundation, has a tradition, has a history and has a management team that is much more fundamentally—MBAish, or process-oriented, or people-oriented, and sound-business judgment oriented, than just about any other classic Silicon Valley entrepreneur, young-kids-oriented kind of startup.

I mean, Sun hasn't *had* that bad quarter, hasn't crashed and hit the wall, hasn't had massive turnover, hasn't had that time when we absolutely had to regroup and refuel and reorganize. I don't know why. You'll have to decide why those others have had those situations and why we haven't.

I like to think that Sun has a real dedication to sound fundamental management. It's real boring. But we spend time to go do things like go one-on-one, have staff meetings, do planning, do reviews, chart where we're going, have a budget process. You know, all of the things that are just fundamental Management 101: do reviews of employees, pay people for performance. I think there's a very squeaky-clean focus on honest, fair, ethical behavior that keeps people from getting frustrated.

The worst thing a manager can do is get in the way of their people. And management here tries to stay out of the way of the people who are doing the real work. When I go into a one-on-one with somebody who works for me, I say, "What can I do to make you more effective?" As opposed to, "Will you do this? Will you do that?", etc. It's a different relationship, it's a different focus, it's a different management style. Why are companies successful? I think it's because of the management culture and structure that they put in place.

A lot of people think that you're kind of young to be running a billion dollar company.

I'm *seriously* young, not kind-of.

Well, the common wisdom is that the best CEOs have already screwed up two or three times, so they've gotten it out of their system. What do you do to compensate—or do you disagree with that?

I probably make more mistakes in a week than most CEOs make in three months. But I'm certainly willing to acknowledge that I've made them and go back and try and fix them. I think that's an attitude and style that exists in this company. It's all right to make mistakes—don't make them twice. Let people know what you're doing. It's a very participative management style here. I try and make as few decisions as possible. That way I'm less likely to make the wrong ones.

"What Sun really wants to be is respected, successful, highly ethical, a fun place to work. That's a more important goal here. I think a by-product of that is growth, profits and all the rest of it."

People often talk about consensus management. We don't have consensus management here at Sun—it's very line oriented. And the line organization makes the decision. And if they own all aspects of the decision, wherever that comes together in the organization, that's who makes that decision—if it can't be pushed down even further.

The one thing we are very much dedicated to is participative management. Everybody knows what decisions are going on—the whole world knows what we're dealing with. There are more rumors, there is more written about, there is more activity in the press about what we're doing, and they're all looking for that magical, "We've figured out what Sun is doing!" They don't understand they're just hearing bits and pieces of a very open, participative process within the company. And yeah, every rumor I've ever heard about Sun has been accurate in the sense that, yeah, we've evaluated it. But they think that because we've evaluated it, it's a direction we're heading. And it's totally misleading.

We used to worry that people would come in and see our email by logging into our network. Once somebody had an email conversation going on about "How are we going to protect our network?" We said, "It will confuse anybody so drastically if they ever read anything at all that goes on in our email"—just because that isn't necessarily a decision. There's a lot of discussion, there's a lot of participation. But then we go make the decision and away we go! And then we announce it. No hidden agenda. It's just, we don't know yet. When we say, "We don't know," we don't really know. When we know, we want the whole world to know so we can tell everybody.

But that's really a management style that was generated out of igno-

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"I'd rather be wondering where I'm going to get my next person as opposed to wondering who I'm going to lay off, or what project I'm going to cut because we're NOT growing."

rance and inexperience when I took over. Three months earlier, I didn't even know what a disk drive did. The last thing I was going to do was try and make a decision, so I tried to get everybody who knew in a room.

You'd be surprised at how basic logic solves most, if not all decisions. And then the rest of the decisions are lose/loses—there's no hope. They don't bring you the easy ones. They solve the easy ones and they only bring you the impossible lose/lose situations.

So you just decide whether you want to lose your right arm or your left leg, and just make some kind of fundamental judgment on which will hurt you less over the longer term. Those are the tough ones that I have to get involved in because nobody wants to be the one that says, "This is gone, or that's gone." Those are the ones I have to make. They're not fun, but they're aired out enough so people understand...in fact, they're pleading with me to make a decision because we've just got to move on. We've got to get it over with and start growing a new arm back.

There seems to be a merging between the workstations and PCs. The 386i seems to be some sort of recognition of that. What do you think will happen in the next few years? Will you go to retail channels?

There has been, at Sun, a very clear statement for a couple of years now; people aren't listening, because they don't want to.

But we don't talk about PCs or workstations anymore. Sun is a general purpose computer company. We are one of the top ten computer companies in the industry, in the United States, and we only refer to desktop computers, networks and servers. There's no such thing as a class. There are desktop computers that are anywhere from a calculator to a high-end 3D, solids modeling superworkstation, or whatever you want to call it. But it's $70,000 to $7 — that's the range of desktop computers you can buy. There's a blend all the way across of different price and performance and functionality points. So I can't answer your question in the sense of PCs versus workstations.

Well, let me put it another way. You can buy "PCs" through traditional retail channels...

You can buy *desktop computers* through many different channels. They can be installed direct, they can be installed through OEMs, they can be installed through VARs, they can be installed through Businessland. You can actually mail order them. That is so misleading, and that is so... *inflammatory*!

It is just inflammatory to say that Sun is going into the PC business! That sends our stock price down! That's why I'm so adamant about this! Because people think that it's something strange or weird. Sun is doing desktop computers! *Deal* with it, world! We've been doing it for a long time, we'll continue to do it! And we'll take it through whatever channel is most cost-effective to take our technology through. So far it's been direct and OEM, and we're expanding now into the VAR channel very aggressively and very successfully. And we think that's going to be a very good channel.

We happen to have some products that go through the dealer channel. Those products have typically been software and board-level products. They're selling through our TOPS organization. Now there are also Sun products going through the private-label channel; Fujitsu is a classic example of that. They're buying hundreds of millions of dollars. So there are many, many different channels, and there will continue to be many different channels that will take our products to market.

So the two questions you are asking are, "Are you going to build lower cost desktop computers?" Absolutely! We've said that from Day One; we will continue to do that. We will continue to drive the price/performance down to lower price points. And we think we can build very competitive products.

At that point, are there other, more cost effective distribution channels to deliver it? And maybe there are some new ones that become more important. Go back 10 years ago, there was no such thing as a dealer channel. Ten years from now there may be a whole new way of delivering this product. We'll stay very flexible. Will our product end up in a ComputerLand or a Businessland, or something like that? Those conversations have been going on for about five years now. They will continue to go on, and everybody wants to be the first to predict when it happens, and it's not useful.

Anybody who needs any of our products—they're totally available. Anybody who needs to get ahold of our product can get ahold of it.

I was trying to highlight the fact that Sun is now competing more head-on with the Macs and the PCs, as opposed to a few years ago when there was a pretty clear distinction.

There never was in our minds. It made it more convenient for people to write about the industry. But when the buyer tried to decide what they wanted to put on their desktop, it was very confusing to them. Because they wanted the Compaq, or the IBM price point, but they wanted the Sun functionality. Now they're starting to see the marriage of the two.

The only reason I get so enthusiastic about this whole concept is that...I just read that Stewart Alsop was quoted as saying, " It's going to cost Sun a billion dollars to get into the PC business." I have no idea where he gets a billion dollars, nor what it means to get into the PC business, because I don't know what the PC business is! If you ask an engineer who has a $50,000 dedicated Sun workstation on his desk, *it's a personal computer to that person!* It's theirs! They own it, they run it, they manage it. It's their computer! It's a computer and it's personal. Personal to me implies a one-to-one relationship.

"Management here tries to stay out of the way of the people who are doing the real work. When I go into a one-on-one with somebody who works for me, I say 'What can I do to make you more effective?' As opposed to 'Will you do this? Will you do that?'"

Are we going to get into the Intel 386, DOS business? We already are! Are we going to get into the $2000, 286 clone business? I can very comfortably say, "Why?" So you have to look at each little piece of the desktop pie, and say, "Is that the one you're going to go after?"

Can we talk about Open Look? It seems like from at least three directions, people are converging on the same thing: A friendly multiuser, multi-tasking environment that's easy to deal with. There's OS/2 out there with Presentation Manager...

There's forty different dashboards out there and you can operate every one of them because fundamentally the concepts are similar enough and intuitive enough so that you know, "Well, that's a radio, and you can turn it on."

From a user's standpoint, what is the advantage of Open Look over some of the other options, all of which have the disadvantage of being a little vaporish at this point?

The user doesn't have any advantage until the product ships. From a user perspective, Lotus *1-2-3* written to Open Look, versus *1-2-3* written to Presentation Manager versus *Excel* written to the Mac—they're all pretty much going to be six of one, half a dozen of another in terms of the training time. You sit in an automobile, it takes you a few seconds to get familiarized with the dashboard. It will take you some minimal amount of time to get familiar with the dashboard, if you will, of this new *Lotus* application or *Excel* application. If you know how spreadsheets work, you'll be able to bomb your way around.

Now the one advantage you can look to is performance, and the features and intuitiveness of the environment. And Open Look, we believe, has more intuitiveness, in the sense that it has things like a tack pin, where you can pin things up as opposed to having them go away. So, you have a push pin that you can push into your little document—that's very intuitive.

It has things that are very productivity oriented. If you want to scroll up in the thing, in a Mac window for instance, you have to move the mouse up to the top right hand corner and then scroll up. And then if you want to move down, you have to move the mouse all the way down, travel all the way down the window to the down button and scroll down—instead of having an elevator which you put the cursor on and then you move your mouse up and down, and it scrolls up and down as an elevator. So, you can go up and down without ever repositioning the cursor. That's highly pro-

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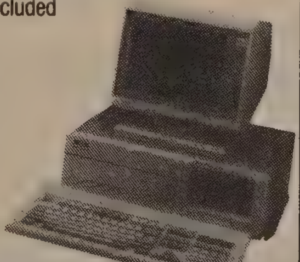

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ductive with respect to that one little task.

Now you do a bunch of those things really well, and you can get an environment that is more productive and easier to use.

Then you have tool kits and the tools that allow you to build an application faster, which means if you buy a computer that supports Open Look you can potentially get applications faster because the developers can build the applications faster. You'll have one that runs in more than one environment. Presentation Manager only runs on Intel machines. As far as I know, it's only *gonna* run on Intel machines. Open Look is going to run on every instruction set in the business. So you have an environment that's much broader and portable. The Mac look and feel only runs on Macintoshes. So Open Look will be much more pervasive across many more computer companies' environments.

So potentially any machine that runs UNIX can run Open Look.

V.4 will have Open Look as part of the package. So any machine that runs V.4 will run Open Look.

The OSF people are forever bitching and moaning that you and AT&T have this lovely sweetheart relationship....

Can I draw you a picture? (starts drawing diagram on tablet)

This is total garbage and the press has been....I'm kind of aggressive, so I apologize, but I think the press has not had an incentive to solve the confusion. And in fact they've enjoyed this story because its probably sold more ad copy than anything. But it's very simple. The world pre-OSF and pre-Archer Group was this: From a UNIX-centric point of view, there was the Coca Cola Classic, which was System V from AT&T. It was the only one with a trademark. It was *the UNIX*, it was *the original*, it is the *only*, right?

There's a whole bunch of what I call variants. There were thousands of them, right? And [drawing chart] let's rank them in terms of volume: XENIX, Berkeley, Sun OS, blah, blah, blah. I don't know what they all were, Ultrix, HPUX, A/UX.. you get way down here and you have AIX.

Which IBM *now* claims to be very proud of.

Right, and it's a non-volume variant. You have to understand that! It was and is a non-volume variant! And then you get down here to probably the lowest volume—Mach, which has maybe six units shipping, thanks to Steve [Jobs]. So, now we have another variant! The press absolutely whiffed on that! He just introduced another G-D variant! We don't need another variant! This is the situation we're dealing with. All right, so this is pre-OSF.

And then we had what I call the deviants. Highest volume there was DOS, then Mac OS, then blah, blah, blah, right. You know, then VMS, blah, blah, blah.. then VM. And then down here you have OS/2. And you pick your favorite going-out-of-business deviant down here. Now that's the world.

"I probably make more mistakes in a week than most CEOs make in three months. But I'm certainly willing to acknowledge that I've made them and go back and try and fix them. I think that's an attitude and style that exists in this company."

Really confusing isn't it? It always has been, always will be. At least for the next few years until we get to the internal combustion engine and everybody does it that way. But it's been confusing.

Now AT&T tries to do the right thing. They said, let's take the highest two volume-variants, Berkeley/Sun OS and XENIX; and let's combine them into V.4. Great. We now have, basically, only low volume variants left. And that's true.

There is no high-volume variant that is more than a few percent of the UNIX volume left in the variant category. And this merges everything to V.4. And what you saw with the Archer Group is that 70+% said, "We're not commited to a variant. We're not commited to a process. We're not commited to an organization. We're commited to shipping this product on our workstations, on our computers, on our everything."

Now you have yet *another* variant being offered [OSF]. Which I put down here absolutely dead last. It has no volume. No volume! I don't care about statements of...marketing statements. It's a mutant AIX. It's a mutant variant. Because they will mangle it, because they don't want to pass through AIX and give this low volume company here [IBM] an opportunity to have an advantage. So this will be a mutant AIX, a mutant variant. And it will be out someday in the mid 1990s. The war will be over, the game is done. It's all over.

Now what people aren't saying, and won't say, because they think IBM is a powerhouse in UNIX, is that there is nearly no chance for any of these variants to become even a low-volume variant, much less a significant volume! If you're a software developer, you're going to develop to this one first because it's the one true product. There are software developers' kits out on X11-NeWS [Sun's windowing environment]. There are software developers' kits out today on Open Look. And you can go to Sun, or XENIX, or a System V machine today and have a very nice migration path to V.4. And there's no environment out here [toward OSF].

I mean, why would you do Ultrix, because they're going to move to OSF? Why would you do HPUX? — they're going to move to OSF. Why would you do A/UX?— just *read* about it. Why would you do AIX?— because IBM isn't serious about UNIX, and it's going to be different from OSF anyhow—which is where they're supposed to be moving.

And what is IBM really doing, given that they're not at all paying attention to the OSF practical user interface, because they went out and did something different with NeXT, and said screw you? I mean, they got them all stuck to flypaper and then ran off. I mean, there's nothing confusing about what I just said! Tell me what's confusing. Because *you* have to be convinced!

The thing that's confusing is—what's in it for them?

What's in it for who?

OSF. From your standpoint, why are they even bothering?

There are two reasons OSF was formed. The first one, which has been solved, was that AT&T wasn't listening to its customers. And AT&T responded. And it probably took those companies all spending $13 1/2 million to get it done. But they formed the UNIX division.

And two is that the Archer Group was formed as a user organization to tell AT&T how and which ways they ought to deal with the licensing terms and conditions — how they ought to handle the technology, etc. That has absolutely solved all the problems H-P had. And I think if you asked H-P, if this had existed nine months ago, would they have wanted to pay $13 1/2 million to another organization that is not likely to generate a product and where most of the dollars are going to IBM's bottom line to pay for AIX? I think they would say no. But now they're trapped. This thing blew up in their face. It became bigger than life. And now they're trapped.

Now, that was one of the problems, and it got solved. As far as Unisys, NCR, Sun and others are concerned, AT&T has absolutely...we *thank* OSF. Thank you very much, you were very useful! We're certainly glad we didn't have to pay to make that happen! But, you know, H-P, you've done the industry a very nice favor. Thank you, now V.4 can proceed and become the standard that it is.

Now, the other problem, and the reason OSF was formed, was that DEC, IBM, H-P and Apollo wanted to throw a big curve ball at Sun Microsystems. And that probably will not go away.

Can we talk about SPARC and where it falls in your overall strategy? You guys are probably at least as much a software company as a hardware company. And now you're a microprocessor company too?

This is another one where the press has got it all wrong! I can't, I mean...

We're so glad we came...

This is why I like to spend the time. Because every time I turn around they say, "There's Motorola pushing the 88000. Intel's pushing the 386, and Sun's microprocessor, SPARC." Sun has never sold a SPARC chip in its life! Never will! It's TI's SPARC! It's Cypress's SPARC! It's Fujitsu's SPARC! You never see it written up! Because they're competing against TI. Motorola isn't competing against

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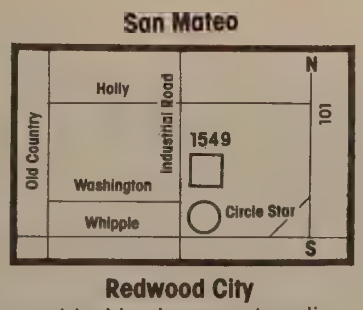

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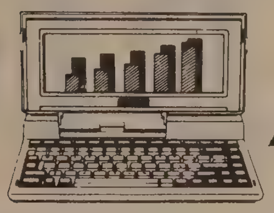

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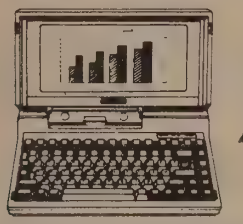

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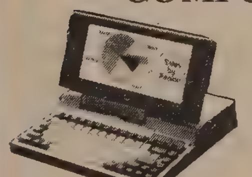

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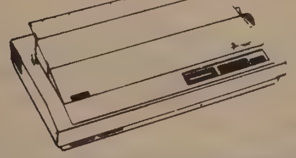

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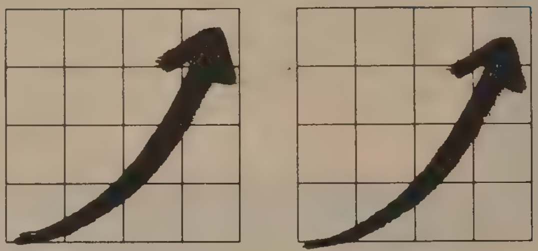

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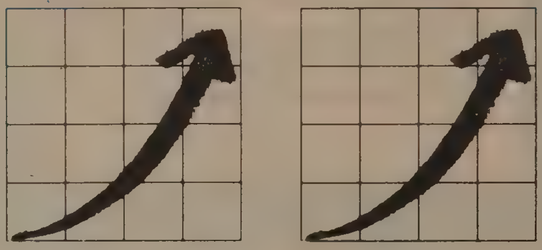

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McNealy on OSF: "What is IBM really doing, given that they're not at all paying attention to the OSF practical user interface? Because they went out and did something different with NeXT, and said 'Screw you!' They got them all stuck to flypaper and then ran off."

Sun in the chip business. They compete against TI. But nobody will ever write that! They refuse to. We don't sell chips!

I actually think that's really pretty clear. As far as you going out and designing...

It's never written that way. I can show you two million situations where its... I've never once seen, "TI's competing against Motorola in the microprocessor business." Not once!

We're going to do some things to change that. But we'll give you a little salt pellet in a rain cloud so you can all kind of gather 'round and make it rain the right way here. But that's our job. Because we don't do SPARC chips. We do the Sun-4 computer based on the SPARC chip. Just like we do Sun-3 computers based on the Motorola chip. And Sun 386i computers based on the Intel chip.

So SPARC was more by way of establishing a standard?

SPARC was a way where we could buy chips from multiple vendors across a broad range of technologies with RISC as the architecture, as oppose to CISC [Complex Instruction Set Computing]. That's all it was.

People are looking for some sort of magic, like we're trying to create a standard. We just wanted to go buy RISC chips where we didn't have to pay one company and count on one company to make that architecture fly. We have seven of the best silicon companies making our V.4 architecture wiggle fast: Intel, Motorola, Cypress, Fujitsu, TI, BIT and LSI. If those seven aren't on the leading edge, then I'll be real surprised.

What's the difference between the chips you'll buy from different vendors?

Oh, BIT's building an ECL (Emitter Coupled Logic) chip that will put out 40 - 50 MIPs. We're buying custom CMOS from Cypress...

Will they all run the same instruction sets?

They are all identical instruction sets. Now they can add enhancements to it, but the basic core architecture is identical.

What does "scalable" refer to?

The fact that its a very simple architecture that can be implemented on gate arrays, custom CMOS, bi-CMOS, bi-polar ECL, gallium arsenide. You can scale it across from very low end computers to very high end computers, from very low clock rates to very high clock rates, from very low tech technology to very high tech technology like gallium arsenide. You can build laptops to supercomputers with the technology.

Do you anticipate a lot of other vendors building SPARC-based machines?

Well, they've already announced. I mean you seen how many people have already announced: Unisys and ICL, Arix, Solbourne, Prisma, AT&T, Sun, Seiko and Fujitsu. There's going to be more SPARC computers than...I really believe that there's more investment, on the silicon side, in SPARC, than any instruction set ever in the history of the world. There is more across a broader range of technologies, across a broader range of companies. There's more software written on the SPARC RISC instruction set, and more UNIX expertise, than any RISC architecture anywhere, by far.

We have the best UNIX teams with AT&T and Sun and Unisys and others working on SPARC UNIX. And there's more application software, by far, written to the Sun-4 with the SPARC microprocessor, in the RISC arena than any other RISC out there, by far. There's higher volume, by far. Do you know we're doing about a third of our revenue right now with the Sun-4? That's after a year of having that thing out in the world. And there are more SPARC computers under development than any other RISC computer development architecture.

And it doesn't matter who wins, because this is a winner! This is one of the winners! I mean, you've seen how many operating systems there are. Well, there are going to be a lot of instruction sets. But this is going to be one of the clear high-volume architectures and one I think you'll see both the classic low-end software developers who develop personal productivity software—certainly all the current mainstream UNIX application developers, and even in the high end when they've typically been writing to mainframes, I think you'll see everybody porting to the SPARC, V.4, ABI—applications binary interface.

So, people just aren't acknowledging...I mean there's nothing I've said that is really refutable. Because people are always challenging me, and if I don't have a very strong conviction I'll retract the statement, but I just can't retract any of those, because there's nobody who's got anything close to anything, all through that spectrum. And yet people, for some reason, are just, I don't know, waiting for the big boom. You know, it just can't be accurate. But this is the same story we've been giving for years, and it's only gotten more accurate.

It seems that you've fallen a little bit out of favor with Wall Street—what's your opinion of that?

Oh, I think that's a further confirmation of our strategy.

In what way?

If Wall Street says they're scared, then it's got to be working. If Wall Street doesn't understand it, then we're doing something right.

What's your opinion—I have to ask this—of the NeXT machine?

Let me go through it. This is kind of a rote answer.

Wrong microprocessor. Why would you do CISC as opposed to RISC? I think he regrets it. You notice he didn't talk about performance at all. Second thing—eight megabytes. This is hardly what I'd call a low-end student desktop computer.

Thirdly, wrong operating system. He's got the second-to-lowest volume variant on the list here. Ahead of only OSF in volume.

Which doesn't exist yet.

Fourthly, he's got a totally proprietary approach. You can't go do an Apple unless you're first. You can't come in last and expect to be proprietary.

Fifth, one of his great advantages is his optical disk, right? We could write a driver for that disk in a couple of weeks and have it through our R&D and QA facility in a month and beat him to market with it, if we wanted.

Sixth is—it's not shipping until next summer.

Seventh is—$6500 is his 40% discount price, not his list price.

Eighth, his sleek styling is nothing more than a big, clunky, ugly cube. Let's call it what it is. It's a very nice paint job — for black. But it's nothing more than a big, clunky box.

His wonderful software development environment that allows you to build applications faster will be necessary, because everybody first is going to write to V.4, and he's going to be way behind, because the first application implementation is going to be done under V.4. And then they'll decide to do #2 to somebody else — probably OS/2 or probably Mac OS. So he's going to be fifth or sixth in line, and he'd better have a way of getting that application out fast, because we're going to have been shipping the low end applications for many, many months before it ever shows up in his environment because of the volume.

Finally, I think he's going to be awfully surprised at the level of competition that he's facing, summer of '89, in terms of what new machines are out there. I saw his product being compared against the 3/50, which was introduced about three years ago.

On SPARC: "People are looking for some sort of magic, like we're trying to create a standard. We just wanted to go buy RISC chips where we didn't have to pay one company and count on one company to make that architecture fly."

Why bother to make that comparison?

Well, he has magic dust! He has absolute magic dust!

And he uses it liberally!

How many people got to play with the machine? It was behind a glass wall. Do you really need to rock on with your bad self when you program? Is Bob Dylan really strategic to programming your computer?

And is it not better to have the DSP as a daughter board plug-in, so that

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it's optional, as opposed to something you've got to pay for if you're not going to use it?

There are a whole bunch of things...where's his floppy? Would you call up Canon [who did the disk drive] and ask them how much the removable media *really* costs—not what he's charging for it? Because it costs 2x what he's charging for it!

Would you talk to him about his *mainframe* architecture? Which, if you sit down with Bill Joy and ask him, "What does he mean by mainframe architecture?"—he means DMA. You should have heard the conversation between Andy [Bechtolsheim] and Bill. Andy came running up to Bill and he goes, "My God, he's got mainframe architecture." Bill says, "What are you talking about?" He says, "Well, he announced that he's got mainframe-like architecture and all this other stuff." Bill says, "Yeah, you know what it is, Andy?" He goes, "No." He says, "Its D-M-A." Andy says, "We've been doing that for years. Oh.. Okay, no problem." He runs back into his lab...

I mean, it's absolutely magical that the guy hasn't shipped anything. Look at the press he gets—unbelievable!

The other thing I think is important to understand is—you have to look at the financial structure of NeXT. He owns 63%, Ross Perot owns 16%, a few founders each own 2%, some universities own 1%. That leaves very little left over. Their burn rate is massive; they've got 200 people. That's a $3 M a month burn rate. Think about getting to next summer with prototypes and all the rest of it—the burn rate he's talking about. He's got a huge, underabsorbed manufacturing operation. He spent $100,000 on his logo, who knows how much on his announcement?

How's he going to hold onto his people with stock options that have to be diluted and are such a small percentage of the company? How's he going to hire and hang onto people? Do you really believe he has a different management style than he had at Apple?

Those are just a few of the questions, thoughts and issues that I would consider around that. Where's his distribution channel?

The price does seem pretty high for a student—maybe the ones who buy the Mac IIs. But given what he's got, I'm surprised he doesn't go to the industry.

No distribution channels. Do you know how expensive it is to build one? We have been growing and building one faster than it's ever been built before. Yet we had stock options that were worth something—to give to people, to get them to come. His stock options aren't going to be worth anything because of the burn rate.

Do you realize how much cash he's used, and he's gotten to zero dollars in revenue? We used $4 1/2 million in our first two years. We were a $40 million company before we used up $4 million in cash. We used another 10 to get to $100 M, and we used another 20 to get to $250 M. We went public on about $50 M in investment. He's going to use that much up getting to summer.

Think about it. How can you make any money and hire the people you need to take it to industry? You can't do it. It is fundamentally a flawed business model in the way he's done it. It's too late. It's DeLorean.

As long as we're on these kind of subjects...The Presentation Manager was just released. Will the 386i support it in future model? Do you think it's important?

Right now, we're putting all our efforts and energies into Open Look. In the same way—why did we do another operating system on top of UNIX? Because there was software written for DOS that was never going to run under UNIX. And so we had to go do DOS.

On Steve Jobs: "How's he going to hold onto his people with stock options that have to be diluted and are such a small percentage of the company? How's he going to hire and hang onto people? Do you really believe he has a different management style than he had at Apple?"

We believe we won't have to do anything other than V.4 as an operating environment, because all software that is important, high-volume, profitable software will have as one of its platforms V.4. Same is true of Open Look.

We believe there will be very few, if any, applications over time that...I

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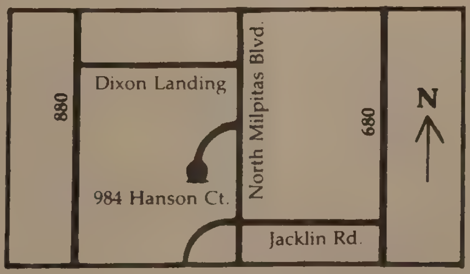

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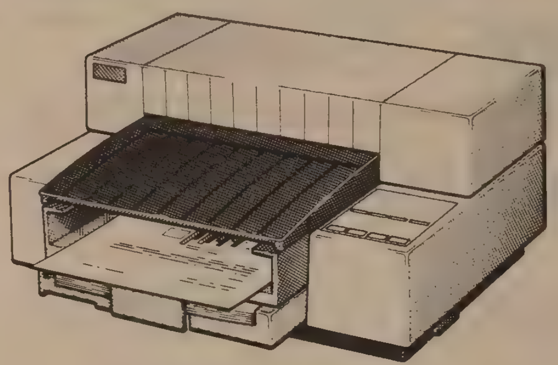

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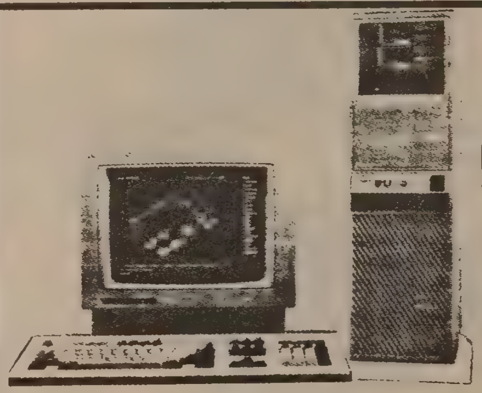

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don't care about the no-volume, nonprofitable companies that can't afford to port to Open Look. If you can't afford to port to Open Look then you're not worth having on Open Look. It's kind of one of these self-fulfilling situations. We believe that all important software will run under Open Look. If that doesn't become the case, then we would look at other operating environments. I'm not sure it would be Presentation Manager.

Part of the reason we believe that is that software developers who are, for instance, competing against Microsoft, don't necessarily want to be based completely on a Microsoft windowing environment.

Especially since I know at least one person who says that Microsoft Windows on a 386 is what drove him to the Macintosh.

That's the neat thing, I think, about the X11-NeWS/Open Look environment—that it's a high performance environment built for the desktop architecture of the '90s. It's built with high performance 32 bit microprocessors in mind, portability in mind, user programmability in mind, and it took us a little longer than most people to get this stuff out, but it was built with a much more 1990s foundation and structure and strength around it. And that portability is something you can't add on to it, and we just think it fundamentally has the support and the energy and the V.4 momentum behind it. So, we're in pretty good shape.

What do you think you'll be able to put on our desktop in five years for $5,000?

I don't know. You'll probably have somewhere between four and eight multiprocessors. Those will probably be 50 MIP chips. So, you'll have between 200 and 500 MIPS on the desktop.

You'll be able to calculate those spreadsheets really fast.

That's a really good point. There's got to be a lot of software work between now and then. But then you'll start to be able to do true voice I/O on the desktop, and you'll have much higher speed networks, and you'll be able to access the server world in a much better way. It will take a while.

You know, Sun could have far and away an order of magnitude easier user interface than the Mac, because it has so much more power and functionality and bits and all the rest of it. It just takes a while for that software to get written. And it will be a while for that to happen. So it will get there eventually.

> **"MITI can tell Toshiba to only ship so many DRAMs, and Toshiba will say, 'OK.' Can you imagine Ronald Reagan calling Scott McNealy and saying, 'Only ship 2000 workstations next month'? Can you imagine that?"**

A complete shift of gears, since you're on record as endorsing Tom Campbell for Congress—what would you like to see happening in the larger political arena which would be good for Sun and good for the industry?

I think the basic issues we're dealing with now—one is the cost of capital. These are not new statements, but that is a root cause of the reason why the Japanese have a monopoly on the DRAM business. And therefore, the Japanese have the ability to control Sun's growth. I think there's fundamental problems with the tax structure in this country, where we tax savings, not consumption—that we ought to move to consumption taxes, not savings taxes. Which requires a major overhaul. I think we have a serious problem with capital gains, and that we ought to encourage capital gains differential.

I think we need to find a way to address countries which have CEOs of industry in their government—that are effective. In other words, MITI can tell Toshiba to only ship so many DRAMs, and Toshiba will say, "OK." Can you imagine Ronald Reagan calling Scott McNealy and saying, "Only ship 2000 workstations next month"? Can you imagine that?

I can imagine what Scott McNealy might say.

Oh, you can! You *can*! But in Japan, they go, "Hai!" [yes]

You know, absolutely, we need to find ways to deal with, and to compete in that environment, because MITI has shown its ability and willingness to exercise monopoly power with respect to DRAM. And every toaster in the world will be shipped with DRAM in five years—your TVs, your automobiles, all of your telecommunications equipment. Everything will have DRAM in it. And they have monopoly control over that right now.

Other than that, everything's in great shape! ■

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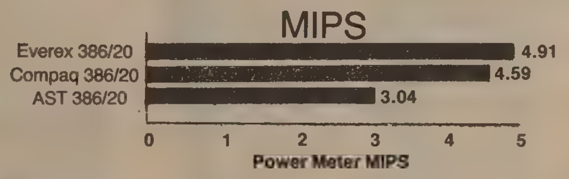

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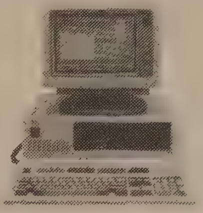

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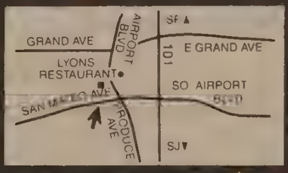


The MicroTimes 100

Our Annual List Of The Industry's Most Influential Leaders

MAN OF THE YEAR:

SCOTT McNEALY
Chairman of the Board,
President and CEO
Sun Microsystems

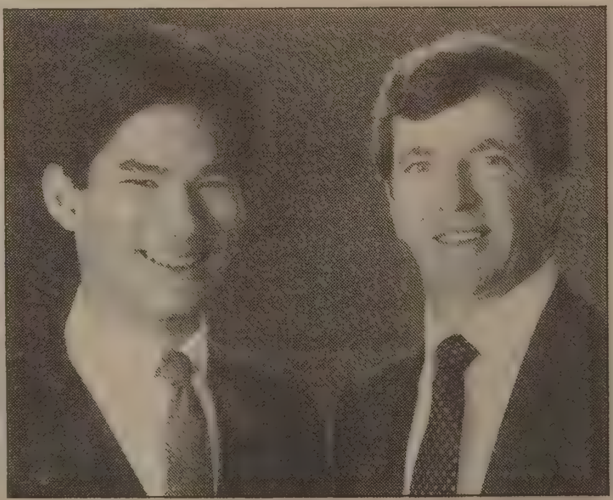
In a year in which connectivity, standards and multivendor environments were key issues, Sun seized and held strategic positions with a series of announcements and alliances (see cover story). From the Sun-AT&T agreement to bring together the diverging System V and Berkeley UNIX dialects into an industry standard to the evolution of the Mac-PC-UNIX TOPS network to the introduction of the UNIX-DOS 386i workstation and the RISC-based SPARC technology, McNealy has led Sun to a position of technological excellence in today's industry and significant influence on its future development. It is, perhaps, equally important that he's managed to do so while maintaining Sun's unique culture of hacker zeal, common sense, business acumen and good fun.

PHOTO: MICHAEL JAY

Phil Adams, *President*
Gilman Louie, *CEO*
Sphere

This year saw the fusion of two outstanding game software houses as Spectrum HoloByte joined forces with Nexa. It looks like another inspired alliance: Adams, who cofounded Spectrum Holobyte and oversaw its sales, distribution, and its acquisition and development of product, brings marketing and management expertise to the new company, while the entrepreneurial Louie, who founded Nexa with his college buddies, has an impressive track record in software development.

Probably the most visible contribution Sphere made to the industry this year was that of acquiring (and porting to as many machines as humanly possible) the diabolically addictive Russian game *Tetris*. Thousands of offices will never be the same. However, Sphere also continued to maintain its ancestral traditions of ingenuity and quality in its other game products, notably the *Falcon* flight simulator, and launched an "International Series" of games, so it's unlikely that *Tetris* will be the last word.



Gilman Louie (left) and Phil Adams

Sheldon Adelson, *CEO and Chairman of the Board*
The Interface Group

Adelson's company, the premier producer of computer trade shows, continues to be one of the chief vehicles for bringing vendors, products and customers together. At COMDEX, Computer Faires and a host of other expos, the wheels of the industry turn, alliances are made, deals struck, and the world changes. Adelson's extensive knowledge and contacts bring a wide variety of speakers and exhibitors to the events, providing a steady flow of information and product knowledge to both individual and corporate computer users and enthusiasts.

U.S. District Judge Robert Aguilar
Apple-Microsoft-HP Look-and Feel Case

In the increasingly surreal arena of look-and-feel, Aguilar presided over the much-ballyhooed suit between Apple and Microsoft/Hewlett-Packard on the issue of Mac-like inter-

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MicroTimes 100

faces. While the case itself promises to be a latter-day *Jarndyce Vs. Jarndyce,* Aguilar has become something of a media figure; as everything from his personal life to his legal style come under scrutiny, many continued to wonder why the case is being tried before a judge whose son works for Hewlett-Packard. (At year's end, the case was moved to the US District Court in San Francisco, to be heard by Judge William W. Schwartzer.)

John Akers, *Chairman of the Board, President and CEO*

IBM

Under the leadership of Akers, IBM is aggressively meeting (and in some cases, beating) new challenges from a host of new and old competitors. As the organization itself gets leaner and meaner, Big Blue has raised speculation, not to mention a few eyebrows, by forward-looking acquisitions of technology from Metaphor and NeXT, Inc. (The latter deal, in the classic manner of high-tech serendipity, is said to have originated at a party, at which Malcolm Forbes introduced Akers to Steve Jobs.) Also, IBM has announced the SAA standard, which will allow its customers to use applications which look, feel and behave the same on any of IBM's machines, thereby simplifying migration to more powerful hardware as a company's needs increase.

Victor Alhadeff, *President*

Egghead Software

In 1983, Alhadeff bought his children an Apple II and went software shopping. He found the experience so disheartening that he decided to start his own chain of what he terms "customer-oriented" retail software stores. Cheered by its customers and often cursed by its competitors, Egghead's been growing ever since and had its first public stock offering this year. Alhadeff's inspired combination of atrocious puns, instantly-recognizable artwork, local software fairs, customer service, a broad selection of software bestsellers and rock-bottom prices have brought the young company a remarkable presence and market share in high-tech merchandising.

Alan Ashton, *President*

WordPerfect

Ashton not only founded WordPerfect but, until last year, was also a full professor of computer science at Brigham Young University. His continuing interest, as evidenced by the company's popular word processor, lies in developing powerful, flexible, easy-to-use software. This year the company undertook the ambitious project of porting of *WordPerfect* to every significant microcomputer platform, including Macintosh, Amiga and Atari. And while the resulting products have had a somewhat mixed reception based on first-release bugs and what many saw as excess DOS dependence, WordPerfect scored points for advancing the cause of connectivity and won thousands of new friends with its excellent support and responsiveness to customer needs.

Bill Atkinson, *Apple Fellow*

Apple Computer

In this, a year in which Apple went unabashedly corporate, raised its prices because it could, and generally alienated a good many of its most devoted customers, Mac lovers drew comfort from the fact that somewhere in the hallowed halls of Advanced Products, Bill Atkinson, who already gave us *MacPaint* and *HyperCard,* is working on something great.

It was also a year in which *HyperCard*—bundled with all Macs at Atkinson's insistence—proved its worth, as commercial *HyperCard*-based applications came to market, thousands of users (including French automaker Renault) decided it was worth buying Macs to get *HyperCard,* and staid software vendors like Oracle decided that *HyperCard* interfaces for their products were the wave of the future.

As for Atkinson, he and the *HyperCard* team continue to enhance and refine the product, which seems to offer more power and require less memory with each release. He also seems to spend a lot of time fielding questions about things he's not allowed to talk about—*MicroTimes* contributing writer Roger Karraker reports: "When I saw Bill Atkinson in Boston I suggested to him that because of HyperTalk's relatively limited vocabulary it would be a natural for voice input programming. He was suddenly and stonily silent."

Daniel Ben-Horin

CompuMentor

Ben-Horin discovered that many nonprofit and social-service organizations in the Bay Area could benefit from the use of computers in their work, in applications from office management to newsletter production. However, many of these people had no idea how to use machines they already had or were uncertain about what equipment they really needed. Enter CompuMentor, Ben-Horin's brainchild, which matches nonprofits with like-minded computer-literate volunteers who provide advice, support and hands-on training. Community work gets done more efficiently, computer fear lessens—and the industry acquires goodwill and new customers.

Michael D. Boich, *President and CEO*

Radius

As an undergraduate at Stanford, Mike Boich bought an Apple I computer in 1976. He eventually became a member of the Macintosh development team at Apple, and founded Radius with other Apple alumni in 1986.

As the Macintosh continues to make inroads into the professional

The Best And Worst Of 1988

Our readers weren't shy about expressing their likes and dislikes for people, products and companies this year. There were some obvious trends—nobody, for instance, had anything good to say for look-and-feel lawsuits—but there were also impassioned statements about individual products and concerns.

The Best

- One popular choice was the long-awaited NeXT machine, as much for the flashiness of its presentation as for its capabilities.
- Metaphor got quite a few favorable comments for its interface technology and its deal with IBM (see main story). Said one reader: "It's the first time IBM has invested in another computer system's company. Quite a coup for a small company like Metaphor." Another reader praised the functionality and design of Metaphor's approach to data interpretation.
- IBM itself garnered praise for its shift to graphics-based interfaces in its product line, and Microsoft, NeXT and Metaphor received compliments for their collaborations with IBM.
- One reader's choice for Year's Best was Dr. Bob Blogets of Teaching Technologies in San Luis Obispo, for his work on educational software for the Apple IIGS. Another reader raved about the Breakthrough 286-12 board—"At $595 it accelerates lowly PCs to a speed faster than most ATs. I've looked at several accelerators, and this is by far the fastest at anywhere near this price range. I find most ATs aggravatingly slow compared to a standard PC with this board. And this board is compatible with every computer and add-in board I've tried." (The reader in question did not give us his name, but did thoughtfully provide the name and phone number of the board's vendor, PCSG in Dallas, TX, 800/544-4699.)
- Another product testimonial from happy user Jeff Williams: Westlake Data's *Pathminder.* Says Jeff: "It doesn't get much publicity, but I use it a thousand times a day. It's the best—better than *Norton, XTree,* etc. Slick, fast and easy."
- And finally, from writer David Batterson: "MCI Mail, for adding the ability to send to any fax machine worldwide via MCI Mail."

The Worst

Here's where things got really lively. There seems to be quite a bit that people loved to hate in 1988.

- A popular bash-ee was the Apple look-and-feel lawsuit against Microsoft and Hewlett-Packard. "What a desperate act that was!" commented one reader. "Apple lost a lot of credibility over that one." "Come on!" snorted another. "They haven't a leg to stand on. They should have done a little homework. What a backfire."
- Just as popular an object of wrath and scorn was Lotus Development. One reader took Lotus and its president, Jim Manzi, to task for "failed promises about *Lotus* 3.0." Another griped about "their 'timely' introduction of various 'vaporware,' i.e. *Lotus* 3.0, *1-2-3-G, 1-2-3-M* and *1-2-3 Mac.*"
- Student Don Lancer nominated the EISA bus standard: "Oh brother—how many more?" On the other hand, UC professor Bill Ibbs panned "IBM, for continuing to insist on the vapor-merits of the Micro Channel Architecture."
- Unhappy users complained about various products with which they'd had bad experiences: one wanted to warn the unwary not to buy the Amstrad PC 1512 ("The wrong computer at the wrong time!"), while another, who seems to have had remarkably bad luck with computer products this year, griped about the Toshiba P321SL printer (the ones in his office required frequent print head replacements and had a penchant for paper jams), *Sidekick Plus* ("Too slow, too big and too incompatible. I'm 0 for 3 on three different computers") and *WordPerfect* 5.0 ("talk about screwing up a good thing…").
- Computer viruses were another thing people would have been perfectly happy to do without.

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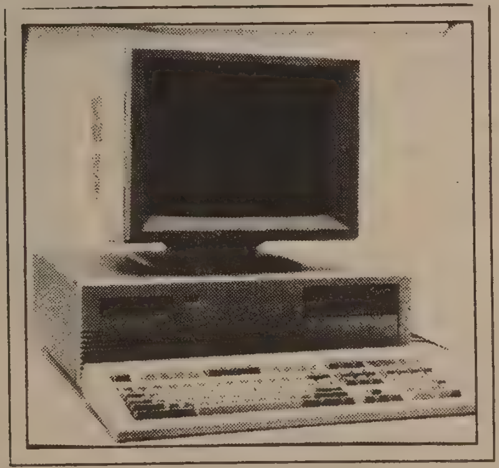

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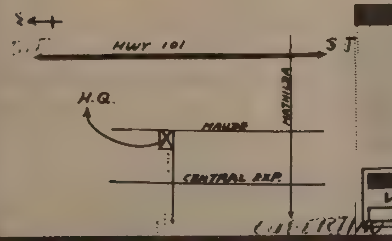

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graphics and publishing worlds, its acceptance is spurred by the Radius. Under Boich's leadership, the company continues to lead and innovate—its products include high-resolution displays for design and layout, ranging from a single-page monochrome monitor to a full-color two-page display unit, to accelerator cards which give the Mac the performance graphics applications require.

Paul Brainerd, *President*

Aldus

Brainerd's publishing expertise and ability to see the Macintosh's potential in that field led to the genesis of desktop publishing. This year, not content to rest on its abundant laurels, Aldus enhanced its flagship product *PageMaker* with new versions for both Mac and PC. True to its origins of defining and dominating new markets, the company continued to expand the envelope of what's possible on a personal computer: it introduced *FreeHand*, the first PostScript-based illustration program with a freehand drawing tool, and announced *Persuasion*, a desktop presentation package, which promises to allow the most inartistic executive to create dynamic, compelling presentations with ease.

Don Brown, *Vice President, Director of Programming*

CE Software

Universally blessed by Mac users for such indispensable and well-behaved products as *MockPackage*, *DiskTop*, *QuickKeys* and *QuickMail*, CE has a deserved reputation for excellence and hacker zeal. That would probably be enough to get Don Brown on this list, but in this, the Year of the Virus, we'd like to salute him for a couple of other things. First, for writing and giving away *Vaccine*, which sits on innumerable hard disks protecting them from invasion. And second, for the notes he wrote to accompany *Vaccine*, which we think address the situation rather well:

> *Some people may invent a virus that defeats Vaccine. Big deal.*
>
> *It does not take a genius of a programmer to do so. It will not get you acclaim, it will not prove you're better than anyone else. If you want a challenge, write a better tool. Not only will you get more fame, you can also make money with it.*
>
> *I do not intend to write further versions of Vaccine. People expressed concern about a continuing spiral of ever-nastier viruses being fought by ever-nastier defenses. I will not fuel this spiral.*
>
> *Some people still fail to see the harm in spreading viruses. I think they're wrong.*
>
> *The whole thrust of the personal computer has been bringing control of the computer to the user. Viruses steal that control away and replace it with fear, uncertainty and doubt. Why would we want to take such a gigantic step backward?*

Why, indeed?

Gordon Campbell,

President, CEO and Chairman of the Board

Chips and Technologies

Campbell, a veteran of Intel, brings expertise and ingenuity to the design of powerful processors. Noting that today's graphics-based environments and memory-hungry software require increased speed and processing capability, while tomorrow's Artificial Intelligence and "human interface" systems will require even more, he leads the company in its drive to extract maximum performance from its products—for example, its chip set for PS/2 clones replicates IBM functionality with fewer chips.

As the business user debated over the OS/2-DOS tradeoffs, Chips and Technologies offered a choice to its hardware-vendor customers. Foreseeing a two-standard future, it responded with processors which duplicate the functionality of PS/2 machines and also continue to work on its NEAT chipset, which offers enhanced AT performance and a migration path for PC/XT/AT users.

Bill Campbell, *President and CEO*

Claris

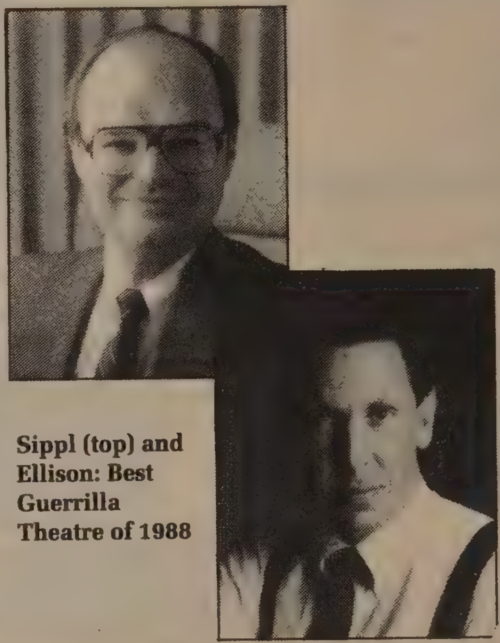
In his first year in charge of Apple's software spinoff, Campbell, a former vice president of sales and marketing at Apple, has used his expertise to make some impressive strides in establishing a Claris identity distinct from the parent company (as evidenced, for instance, by his less-than-enthusiastic remarks at AppleFest about Apple's less-than-popular price increases). In addition to shipping updated versions of erstwhile Apple applications like *MacDraw* and *MacProject*, Claris made some strategic acquisitions (of Nashoba and its *FileMaker 4* product for the Mac, and StyleWare, developers of *GSWorks*, rechristened *AppleWorks GS*, and *MultiScribe GS*). It's showing good signs of offering a full range of powerful applications, having also announced *Claris CAD*, *SmartForm*

The First Annual Philippe Kahn "We're Not Going To Become A Bunch Of Corporate *******s" Award

This award has been instituted in commemoration of last year's deathless comment by Borland's president in response to an oration by Ansa president Ron Posner. Posner, you'll recall, wrapped up the announcement of the Borland-Ansa merger, which brought the database *Paradox* and its Fortune 500 customers to Kahn's company, with an astonishing paean to the glorious future of Borland now that it had decided to join the real world. Posner (who shortly thereafter left Borland to seek his fortune elsewhere) was rendered nearly apoplectic by his new boss's characteristically scatological rejoinder.

Let's face it—as the corporate world adopts microcomputers in record numbers, a certain creeping dullness is making its way into the industry along with the megabucks. A dullness that's all the harder to take because most of the founders of the personal computer industry are pretty interesting folks. So, as an antidote to this faceless homogeneity, the editorial staff of *MicroTimes* has instituted this award for the interjection of liveliness in the strangest of places.

This year's award goes to presidents **Larry Ellison** of **Oracle** and **Roger Sippl** of **Informix**, who jointly created the year's best bit of impromptu guerrilla theatre at, of all places, a Pyramid press conference.



Sippl (top) and Ellison: Best Guerrilla Theatre of 1988

This summer Pyramid had a spiffy new workstation it was unveiling, and hit upon the notion of combining the announcement with a symposium on the future of relational database technology. Toward this end, it succeeded in putting together an illustrious panel consisting of top executives from almost all the vendors of relational databases in the UNIX world.

As you might imagine, a panel discussion of relational database technology, while informative and certainly of great interest to those who specialize in these matters, is a pretty staid and decorous affair. And so this one started, as executives including Sippl, SCO's Doug Michels and Sybase's Mark Hoffman said all that was proper about their products, their powerful features, their flexibility, their glorious future, etc.

Finally it was Ellison's turn. Now Oracle is a very large, very successful database company, and Ellison is known never to have had much regard for humility. Nor does he seem overly worried about what his rivals think of him. So he sarcastically remarked that since all his competitors had claimed wonderful and superior properties for their products, he was going to insist that Oracle's product had all those qualities and then some. Once he had the undivided attention of his amazed audience and co-panelists, he continued by casting aspersions on the credibility of his rivals' claims about their products' performance in benchmark tests, because after all, everybody *knew* Oracle was superior in every way to every other product.

Well, apparently benchmarks are something of an obsession in the database world. In any case, Ellison's remarks were too much for Sippl, who had heretofore spent many successful years in the software business without acquiring the reputation of a firebrand, but was roused to fury at the slurs on his veracity and his product. What ensued was a lengthy shouting match in which Ellison and Sippl hurled epithets at each other, each shouting extravagant claims as to the ability of his software to outperform his rival's in any benchmark yet devised. Physical violence seemed a distinct possibility as the combatants were restrained by their fellow panelists; a shaken Pyramid executive, in response to Sippl's urgent request, promised to host a series of Oracle-Informix performance tests on Pyramid equipment at no distant date.

If this test took place, we haven't heard about it. However, we'll probably always wonder about that lurking element of danger in database discussion.

A footnote: while we haven't heard yet how Informix performs relative to Oracle, we've recently heard a few denizens of Sybase chortling about how their product beat the pants off of Oracle...

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Rod Canion, *President and CEO*
Compaq

As one of our readers commented in nominating Canion for this year's list, "By building the fastest 386 machines and spearheading EISA, Compaq has significantly reduced IBM's dominance in the marketplace, a feat not to be taken lightly. Sure, cheap clones have helped erode IBM's market share, but guess who paved the way for that!"

Enjoying another banner year, Compaq continued to lead the market of powerful computers based on the evolving AT standard. In a move likely to influence not only the acceptance of IBM's PS/2 line but also the evolution of standards for years in the future, Compaq also was among the strongest supporters of the Extended Industry System Architecture (EISA), a non-Micro Channel bus which will allow 32-bit machines to operate at high speeds while retaining compatibility with existing PC and AT cards.

Marc Canter, *President*
Macromind

It is probably true that Canter's most well-known contribution to the industry this year was his inadvertent transmission of the "Peace Message" virus to half the copies of *FreeHand* in Aldus' first production run. But that's not why he's on the list, even though last March saw plenty of peace messages around the old *MicroTimes* offices. No, it's because Canter and the folks at MacroMind spent another year working on their revolutionary *Videoworks* and its various drivers, causing phenomenal growth and innovation in the field of Mac-based desktop presentations and demos.

Cathy Carlston, Doug Carlston, Gary Carlston
Brøderbund Software

It's been another year of high-quality, award-winning software for Brøderbund, which combines an obsession with excellence and responsiveness to its users with the finest qualities of a family business. Among this year's noteworthy endeavors—support for Tandy's DeskMate operating environment, which brings a low-cost windowing interface to the most low-budget PC clones, new graphics and publishing software for Macintosh users, and the advent of an online (changed weekly) version of the popular *Carmen Sandiego* series on the Prodigy service.

Frank Caufield, *General Partner*
Kleiner, Perkins, Caufield & Byers

As one of the industry's leading venture capital organizations, KPCB backs companies which amount to a Who's Who of high tech: Lotus, Ansa-Borland, Compaq, Sun, Symantec, Sybase, Wyse, Quantum and many others. It also encourages a high degree of cooperation among those companies, a policy which has led to many of this year's notable strategic alliances. In addition to his high-tech endeavors, Caufield spent part of the last year in the horizon-broadening activities of traveling in China and backing Boz Scaggs' new blues nightclub Slim's.

Dennis Chang, *President and CEO*
Jasmine

One of the first to recognize the importance of the Mac storage market, Chang established Jasmine as a mail-order business, selling low-cost but highly reliable hard disks. His policy of responsiveness to customers led to Jasmine's practice of designing new products to incorporate requested features; he's also been known to decline to offer products that didn't measure up to his own standards of low cost and maximum reliability.

As Jasmine moved from a predominantly mail-order company to an increased presence in the dealer channel, the company continued to maintain a deserved reputation for responsiveness and excellent quality among its users. Its growing variety of storage devices for the Macintosh found unprecedented acceptance, and the company continued aggressive efforts to upgrade and enhance its product line while keeping the rock-bottom prices its faithful users have come to love.

Balance of Power: The Reorganization Of Apple

As Apple Computer pursued its announced goal of becoming a $10 million company (a process it apparently decided to accelerate by raising its prices in the fall), it spent most of this year hiring new people and restructuring its organization to the point that it's increasingly hard to tell the players without a scorecard. As Chairman/CEO John Sculley spent the summer on sabbatical, there were dramatic changes in the ranks of his immediate subordinates and rampant speculation as to Sculley's heir apparent when he decides to move on. The dust hasn't settled yet, as Cupertino buzzes with talk of chaos in the ranks and turf wars among the executives.

In August the company was revamped in a move that split Apple into four divisions, each with its own president. Longtime Apple veteran Del Yocam was appointed president of Apple Education and Apple Pacific; Michael Spindler assumed the presidency of Apple Europe. Meanwhile, erstwhile product development vice president Jean-Louis Gassee (he who showed up for the DEC-Apple press conference in a sober gray suit and a flamboyant diamond earring) was appointed president of Apple products, where he exerts significant influence on the company's future direction by supervising its research and development effort. Also rapidly rising was the star of relative newcomer Allan Loren, who was appointed president of Apple USA.

October saw further realignments, as Yocam announced his intention of leaving Apple on the occasion of his tenth anniversary with the company in November 1989. While he continues to supervise and develop Apple Pacific and look for his own replacement, Apple Education—one of the company's key markets—has been reassigned to Loren's division.

Observers seem to be eying Gassee and Loren as the likely contenders for Sculley's job. Since Sculley hasn't given any indication that he's planning on going anywhere, this speculation is, for the moment, mostly hypothetical. Still, both men have enjoyed rapidly-ascending fortunes in recent months and will undoubtedly wield increasingly strong influence as Apple continues its expansion.

Neil Colvin, *Chairman of the Board, Chief Scientist and CEO*
Phoenix Technologies

A long-time veteran of software development, specializing in operating systems and programming tools, Colvin founded Phoenix in 1979. The leading purveyor of BIOS code for Intel-based machines from the original PC to the current crop of 386es, Phoenix exerts a profound influence on existing and impending technology. Its continuing research and development will remain a significant element in future generations of machines and the strategies of the companies who manufacture them.

James H. Clark, *Chairman*
Ed McCracken, *President and CEO*
Silicon Graphics

In its relatively short existence, Silicon Graphics has acquired a reputation for excellence in the area of real-time 3D workstations in the engineering and scientific marketplace. Until this year, though, their machines were too expensive to attract large numbers of users for general computing purposes. This year, however, with the introduction of the $16,000 Personal Iris workstation, Silicon Graphics made RISC-based performance relatively affordable, a move which is likely to have a profound impact on high-end Mac II and 80386-based workstations as well as on the acceptance of the fabled NeXT machine itself—particularly since SG is committed to reducing its prices still further as the Personal Iris begins to ship in quantity.

Bruce Davis, *President and CEO*
Mediagenic
Chairman of the Board, **Software Publishers' Association**

Davis presided over a major restructuring of Activision, which had been plagued by the boom-bust cycles of the home-entertainment market, into the diverse Mediagenic, comprised of separate divisions which address business-productivity, presentation and entertainment markets. Mediagenic's software offerings this year included substantial *HyperCard*-based tools, establishing the company as a leader in that market. This year Davis also served as chairman of the Software Publishers' Association, which promotes and supports the software industry with programs ranging from the annual SPA Software Awards to the national Computer Learning Month campaign.

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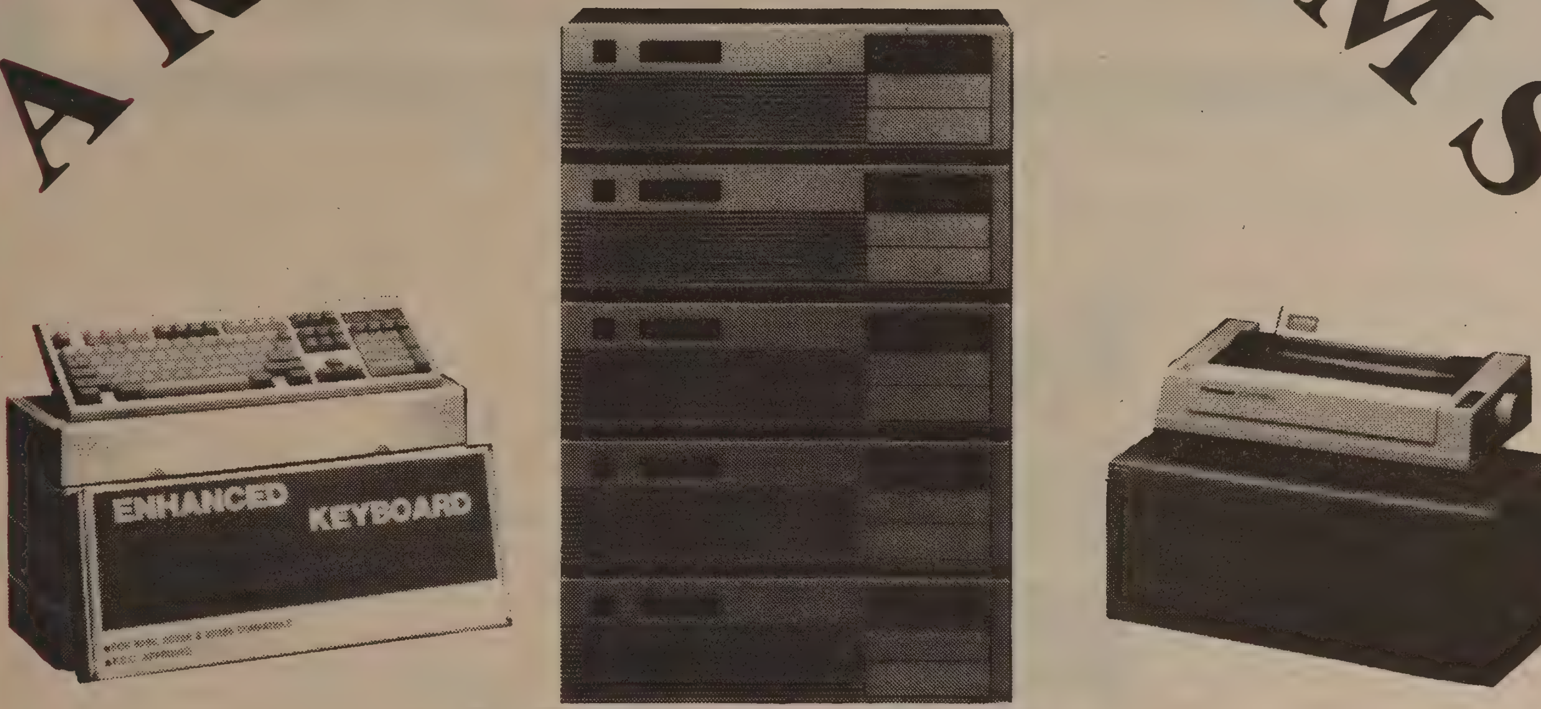

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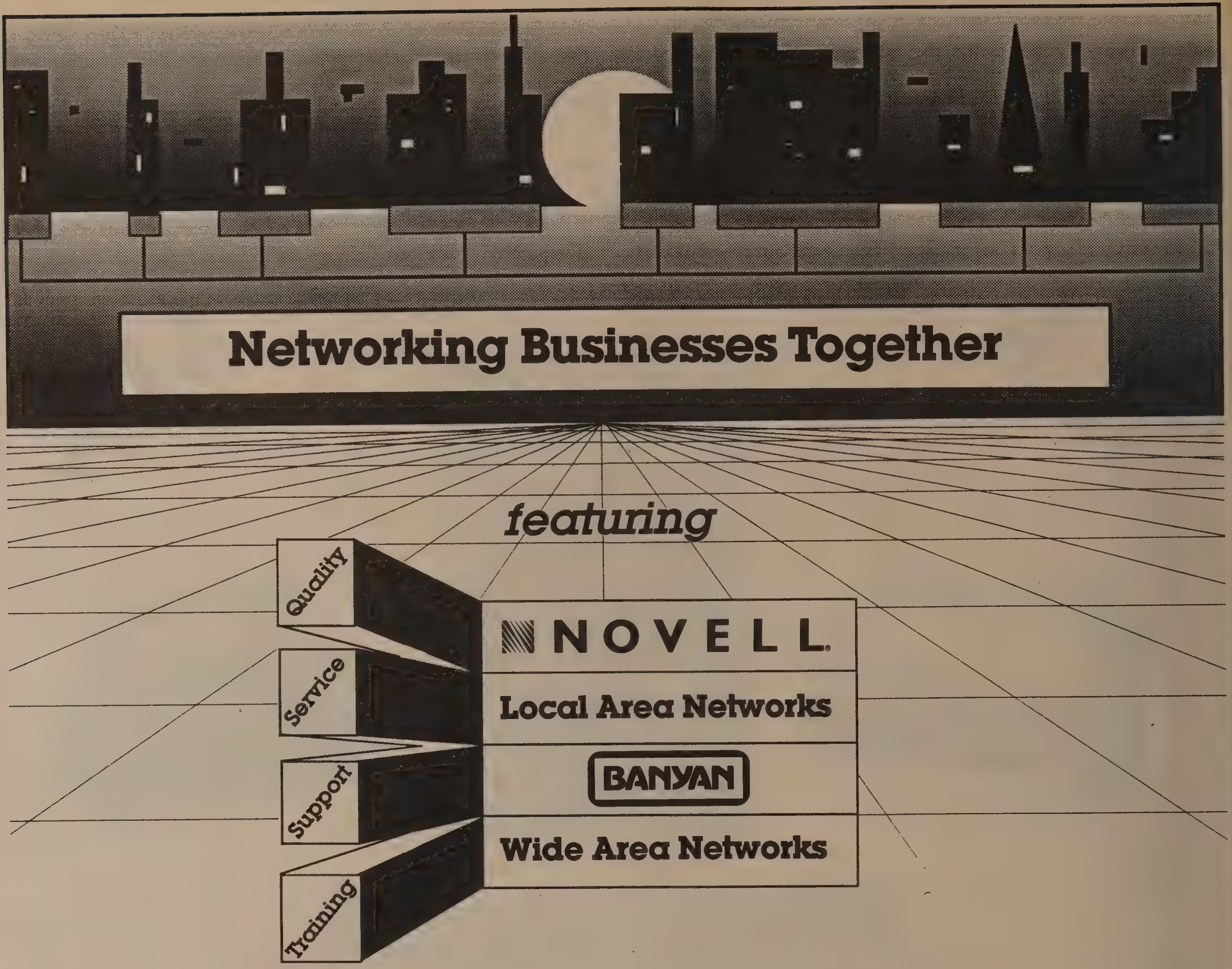

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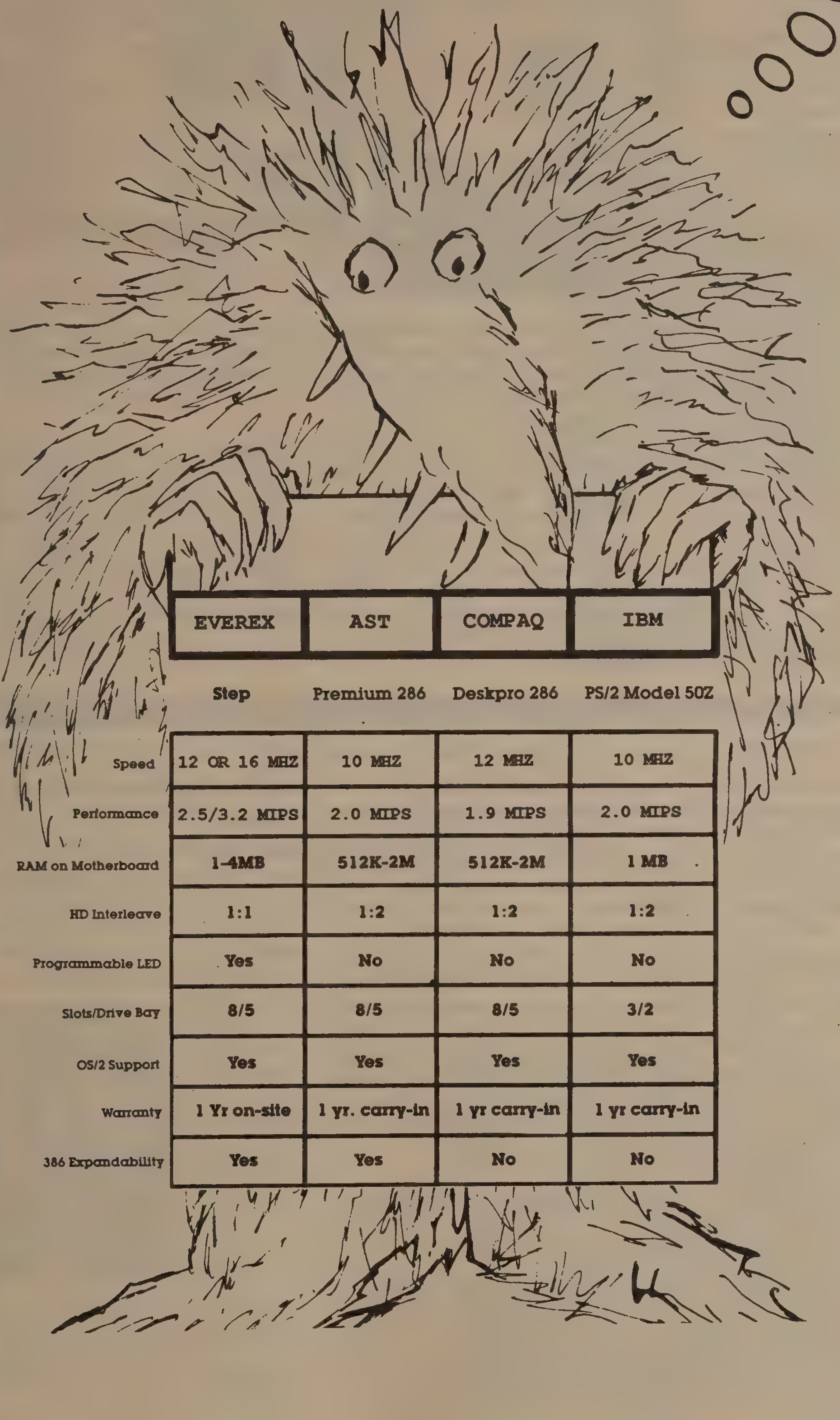

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Programmable LED	Yes	No	No	No
Slots/Drive Bay	8/5	8/5	8/5	3/2
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386 Expandability	Yes	Yes	No	No

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7. DOS

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8. OS/2

Most vendors like to hide the fact that OS/2 is vendor level specific This means vendors seeking to have OS/2 compatibility have to provide you with their version of OS/2. **EVEREX** has a version OS/2 available as an option for their machines.

9. Warranty

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10. 386 Expandability

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MicroTimes 100

Computers: A Family Affair

While many companies like to think of themselves as one big happy family, we find quite a few actual family businesses in various aspects of the microcomputer industry.

The first family of software is undoubtedly the Carlston clan of Brøderbund Software. Brothers Doug and Gary founded the company to market some games Doug wrote during a long New England winter, and the rest is history. Doug is now president and CEO, Gary Chairman of the Board and Senior Vice President of Planning and Strategic Development; their sister Cathy is Vice President of Education Market Planning. Quite often Brøderbund products will draw their inspiration from one of the Carlstons' ideas—the popular *Carmen Sandiego* series, for instance, arose from the brothers' childhood fascination with almanacs, *Fantavision* from Gary's interest in animation, and the much-praised *Science Toolkit* series from Doug's fondness for scientific experiments.

No account of the family business would be complete without taking note of the Tramiel family, father Jack and his sons Sam and Leonard. Their acquisition of Atari a few years ago brought about a resurgence in the company's fortunes and a series of powerful, low-cost computers on the market. Not much has been heard from Atari this year, but we expect it and the Tramiels to be back in customary force in the near future.

In the retail world, we find the Fry brothers, who did the family grocery business one better and started the ultimate supermarket for technoids, Fry's Electronics, a legendary establishment which expanded to a second location this year. As the reclusive brothers work on mysterious software projects, hordes of happy shoppers flock to what's probably the only establishment to stock chips of both the silicon and tortilla persuasion.

It's not necessarily all rosy in the family business, though. Consider Kaypro, which has often encountered problems in dealing with rapidly-changing markets. Chairman and founder Andrew Kay recently ousted his son David from the company presidency, and is currently serving as acting president himself while looking for a replacement.

The Carlstons of Brøderbund: Software is the family business.

Fred Davis, *Editor-In-Chief*

MacUser

Since its acquisition by Ziff-Davis and with Davis's excellent management, *MacUser* has rapidly become one of the most valued resources available for Macintosh users. It has nearly doubled in size in the past year, providing in-depth discussion of products and practical advice on the occasional tribulations of Mac ownership. In accordance with Davis' high standards, *MacUser* is working hard to earn and keep its growing number of devoted readers.

PHOTO: TOM UPTON

Michael Dell, *CEO, Chairman of the Board*

Dell Computer

This year the former PC's Limited continued to expand its leadership in the clone arena, extend its direct-sales marketing and improve the performance of its products. Dell's company was also one of the first to reach an agreement with IBM to license the PS/2's Micro Channel technology, a noteworthy move in that it involved agreeing to pay IBM royalties on previous sales of Dell's PC/XT/AT clones. In a move aimed directly at the corporate market, it also instituted an aggressively low-cost leasing program for its machines. While Dell brought in a team of corporate-style management to deal with the company's rapid growth and expansion, he left little doubt about who was in charge of the company he's run since he founded it while still in college.

Brian Dougherty, *Founder and CEO*

Berkeley Softworks

Creators of the windowing GEOS interface for Commodore 64 computers, Berkeley Softworks found increasingly wide acceptance for its product, which brings increased ease of use to otherwise-obsolescent machines. This year saw Commodore itself bundling the GEOS interface with its disk drives; 1988 also witnessed the arrival of GEOS for the Apple II, which gives schools with substantial investments in Apple machines the opportunity to acquire the far less expensive Commodore computers and retain the same operating environment on both machines.

John C. Dvorak, *Columnist*

You love him or you hate him; either way, if you're like thousands of other computer users, you read him religiously. Gadfly, debunker and general cynic, Dvorak put in another year of cutting through hype, serving as user advocate and stirring up controversy whenever things threatened to get dull.

Steve Edelman, *Chairman of the Board, Chief Scientist*

SuperMac

After last year's acquisition of SuperMac by Scientific Micro Systems, it soon became evident that the merger stood to be the undoing of both companies. While SuperMac's products, particularly its line of Trinitron monitors and video cards for the Mac II, were much in demand, SMS found its capital so depleted by the acquisition as to be unable to support SuperMac's growth, as well as its extensive research and development costs. However, SuperMac's founder, the opinionated and often acid-tongued Edelman, is not one to blithely accept such a situation; in a move that will probably benefit both companies as well as Mac users worldwide, he succeeded in orchestrating a management-backed buyout of his company, and we look for SuperMac's rapid return to its leadership role in Macintosh product development.

Larry Ellison, *President and CEO*

Oracle

Ellison's take-no-prisoners approach to software development and marketing may not endear him to his competitors, but it's made Oracle one of the nation's largest (along with Computer Associates, Lotus and Microsoft) software companies and one of the earliest pioneers in SQL-based relational databases in multivendor environments. This year Oracle made some aggressive inroads into the microcomputer world, with announcements ranging from a *HyperCard*-based interface to its database product to support of the EISA bus, all of which are likely to position Oracle favorably in the work environments of the next few years.

Mark Eppley, *President and Founder*

Traveling Software

In 1982, Eppley, a computer consultant with a specialty in accounting applications, founded Traveling Software to develop productivity software for laptop computers. He soon realized that laptop users didn't just need applications, they needed an easy way to let their laptops communicate with other computers, and so the company has been addressing those needs ever since. This year the company came into its own as the demand for portability and connectivity reached new heights. An increasing number of users discovered Traveling Software's range of indispensable products, from storage devices and software in ROM to cables and utilities which allowed laptops of all persuasions to easily exchange data with desktop PCs or Macs. With OEM agreements with most significant vendors of laptop computers, Traveling Software is a key element in the explosive growth of portable computing.

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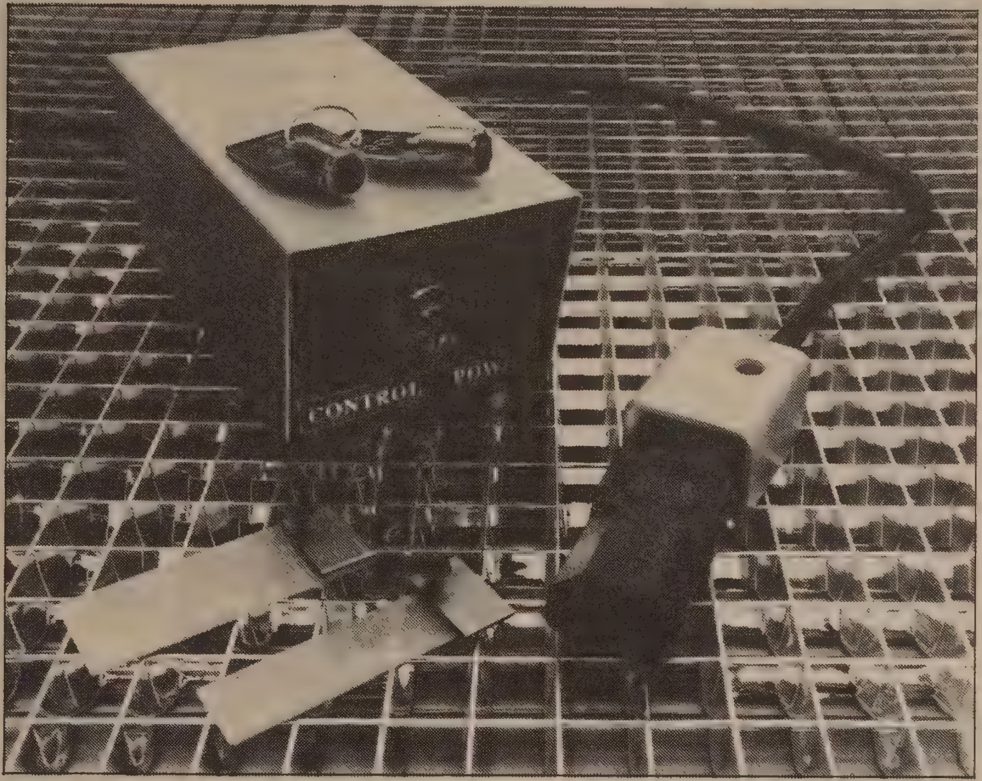

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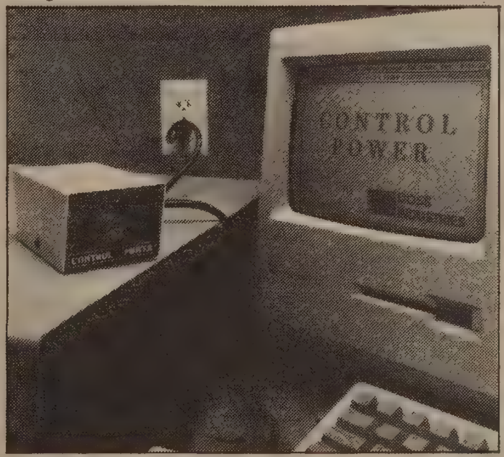

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MicroTimes 100

Ed Esber, *Chairman and CEO*

Ashton-Tate

Last year the future looked a little uncertain for Ashton-Tate, with a great deal of publicity devoted to the long delays in *dBASE Mac*'s shipments, litigation with departed programmers and executives, and a general atmosphere of turbulence. Esber himself seemed more than a little defensive about the company's state, with occasional public outbursts against Ashton-Tate's rivals and caustic remarks about the inadequacies of the managers he fired. A year later, Esber's firmly in control and the company is back with a vengeance, with a solid family of Macintosh business applications (including the memory-hungry but brilliantly conceived *FullWrite Professional*, which Ashton-Tate acquired along with its developer, Ann Arbor Softworks), enhancements to *dBASE Mac* shipped, and the long-awaited *dBASE IV* finally on the scene. Further, the company's alliance with Sybase and Microsoft positions it favorably in the impending database wars, in which the ability to provide power, performance and a transparent interface across operating environments assumes crucial significance.

Gordon Eubanks, *President*

Symantec

As one of the leaders in the transition from single-user to "groupware" applications, Symantec is a sterling example of the cooperative approach to doing business, having been much in evidence this year in announcing support for a wide variety of standards. The engagingly self-effacing Eubanks has led the company through a period of growth and diversification, acquiring products and companies to allow Symantec to address a full range of markets. Committed to developing applications in the DOS, OS/2 and Macintosh environments, Symantec also endorsed the Intel/DCA communications standard and supports Tandy's DeskMate operating environment, which brings a simple windowing interface to the most bare-bones PC and has a profound impact on the home-office and small business market

PHOTO: BILLY DOUGLAS

Tim Farris, *President and Founder*

Boca Research

One of relatively few manufacturers of expansion boards that design and manufacture their products in the United States, Boca continues to refine and innovate in its continuing campaign to bring power and efficiency to PC users. Himself a distinguished engineer who designed the first standard EGA board, Farris sets the standard of quality and dedication for his company and an example to the industry.

Manny A. Fernandez, *President and CEO*

Dataquest

For those whose livelihoods depend on making sense of the often confused and complex high tech industries, the skilled analysts of Dataquest provide invaluable information and insight with their reports and seminars. Under the leadership of Fernandez, the company has expanded its range of products and services, strengthened its presence in overseas markets and increased its influence and prestige.

Clifford Figallo, John Coate, David Hawkins, Robin Gail Ramsey And A Cast Of Thousands

The WELL

In one sense, The WELL, Whole Earth's conferencing system, is a creaky old VAX, a temperamental disk or two and a whole bunch of phone lines and modems that work most of the time. In another, it's a resident—and growing—population of intelligent people who "meet" to discuss an amazing variety of subjects, from Artificial Intelligence to Z88 laptops, with stopovers in such scenic hamlets as Forth, Macintosh, Television, True Confessions and Grateful Dead. Considerably to the surprise of naysayers, this freewheeling endeavor has not only stayed afloat but has managed to grow and become profitable. History will undoubtedly make much of the WELL as a pioneering revolutionary in telecommunications; as WELL users, we'll settle for giving its staff and users a much-deserved salute for keeping the experiment-in-progress alive and interesting.

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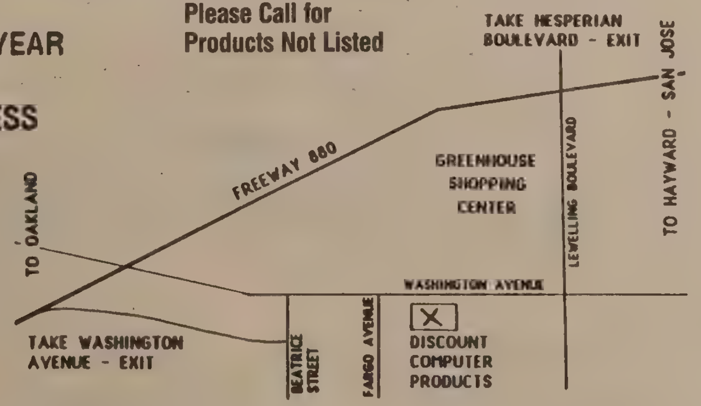
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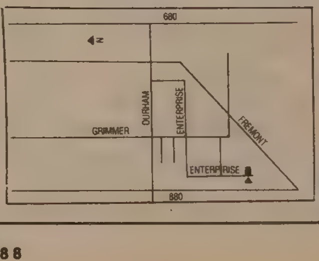

MicroTimes 100

John Frank, *President*
Zenith Data Systems
It's been another good year for Zenith. Most notably, as the portable computer becomes increasingly indispensable to a wide variety of business users, Zenith has been very successful in providing thousands of users with state-of-the-art laptop technology, most recently with its new line of lightweight, powerful SupersPort models. President Frank has also been instrumental in Zenith's successful overall strategy of targeting products to the educational, technical and corporate marketplaces.

John Fry, David Fry, Randy Fry, Kathryn Kolder
Fry's
This year the ultimate electronic supermarket (and tourist attraction) continued to bring its unique brand of computer merchandising to hordes of satisfied customers. In a move much hailed by East Bay techies, the operation has expanded with the opening of a second store in Fremont. Persistent rumors floating around the Valley report that John Fry has written a specialized software application which is used to administer the entire business; further rumors have it that he's currently working on porting the software to the NeXT machine.

Bill Gates, *Cofounder and Chairman of the Board*
Microsoft
It's been a turbulent year for Gates and Microsoft, what with look-and-feel lawsuits here and IBM's bet-hedging acquisitions of NeXT and Metaphor interface technology (which, according to some analysts, casts a certain doubt on the future of Presentation Manager as the Big Blue interface of choice) there. Nonetheless, the software giant enthusiastically continued business as usual, releasing a new version of DOS, shipping OS/2, bringing out enhanced versions of *Word,* and generally maintaining its dominant position in the programming and operating system arenas in the micro world. Gates himself was a hard-working and persistently affable spokesman and promoter for his company, to the extent of staging an elaborate display of good fellowship with Apple and downplaying the importance of its look-and-feel lawsuit against Microsoft. So successful was he in his role as goodwill ambassador that his uncharacteristic lack of enthusiasm for the NeXT workstation attracted nearly as much attention as the machine itself.

Vladimir Gerasimov, Alexey Pazhitov
Authors of Tetris
Glasnost, schmaznost. We know perfectly well that *Tetris* is a fiendish plot to sap the productivity of American workers by instilling in them an insatiable desire to build pleasing arrangements of colored boxes. And as for all that nice Russian music and lovely scenery from the USSR—there's probably some dark subliminal message in there too. Works pretty good, guys. What are you working on for next year?

Charles Geschke, *Executive Vice President*
John Warnock, *President*
Adobe
Warnock and Geschke founded Adobe in order to develop and market PostScript, a page description language descended from their work at Xerox PARC. The growth of PostScript and that of desktop publishing have been rapid and symbiotic, with the language a favored standard for output devices and font generation. Adobe had another groundbreaking year in 1988 with the unveiling of Display PostScript, the ultimate what-you-see-is-what-you-get screen display, on the NeXT workstation; other platforms are expected to follow. Meanwhile, Adobe also expanded its software operation considerably, with a burgeoning library of downloadable fonts and the PostScript graphics program *Illustrator 88,* successor to last year's revolutionary *Illustrator.*

Charles Geschke

John Warnock

Nat Goldhaber, *General Partner*
The Cole Gilburne Fund
Now that he's sold TOPS to Sun Microsystems, where its product is an integral part of Sun's "The Network Is The Computer" strategy, Goldhaber has moved on to the world of venture capital with Cole Gilburne. Currently he's on the board of

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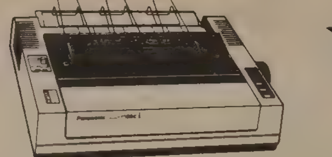

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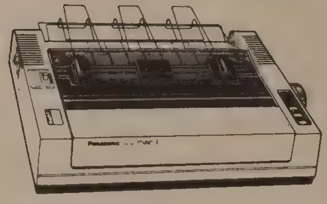

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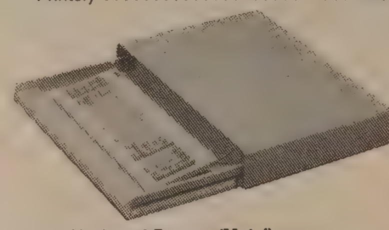

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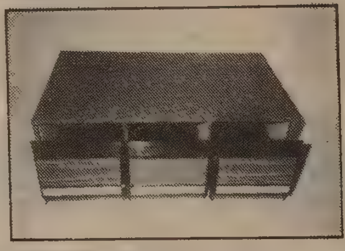

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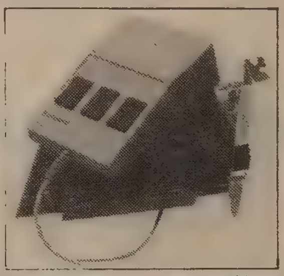

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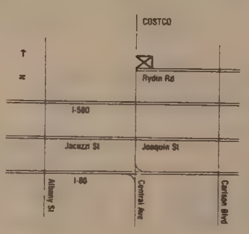

PHOTO: PAT JOHNSON

directors of Shiva Corporation, in which Cole Gilburne has a considerable interest. Not surprisingly—Goldhaber has a long-time interest in networking, and Shiva currently makes the popular NetModem for AppleTalk networks and promises a range of products for networking applications.

Danny Goodman, *Author*

As author of the first *HyperCard* text, *The Complete HyperCard Handbook*, and of *Focal Point*, one of the first and most useful *HyperCard*-based applications, Goodman has made a great contribution to the rapid acceptance of *HyperCard* itself and to the phenomenal increase in easy-to-use tools as a result. To say nothing of the growth in sales of the Macintoshes those tools require.

Judge Harold Green

RBOC Breakup

As the chief magistrate in charge of administering the breakup of the Regional Bell Operating Companies (local telephone companies), Judge Green determines which enhanced services, if any, the local companies can provide in competition with outside vendors, which makes him one of the most influential forces in determining the future of computer-based communications. This year he determined that the RBOCs may provide network administration, voice mail and email services to its customers; however, he also continued to bar them from becoming information providers because of the significant hazard that they would thereby become a monopoly in the information-service arena.

Alan Hald, *Chairman of the Board*

MicroAge Computer Stores

In addition to guiding his company through a successful program of growth and expansion, Hald serves as one of the leading voices of the dealer channel. This year he was elected Chairman of the Board of ABCD: Microcomputer Industry Association, the trade organization of computer resellers, where he's worked aggressively to keep dealers abreast of changes in the industry, particularly as the market evolves toward greater importance of the VAR channel and extended customer support.

Trip Hawkins, *President and CEO*

Electronic Arts

Founded as one of the ultimate fun-and-profit companies by Apple veteran and entertainment buff Hawkins, who's still reputed to go to over 100 movies a year, Electronic Arts has undergone a considerable evolution from its origins as a purveyor of state-of-the-art games (an endeavor it hasn't abandoned). Though its product line now extends far beyond games, all EA offerings retain slick presentation, great graphics and a certain irresistibility. One of EA's particular strengths this year is the advent of a full range of sophisticated graphics tools for the Amiga, ranging from paint and draw programs to video applications. Also, this year EA entered the Mac II graphics workstation world with the shipment of *Studio 8*, a sophisticated high-end paint program.

Mark Hoffman, *President*

Sybase

In 1984, Hoffman and some colleagues from Britton Lee founded Sybase to develop flexible, software-based relational databases in high-volume applications, where data integrity and reliability are vital. Sybase has established itself as a leader in SQL-based client-server architecture, providing large numbers of simultaneous users with applications to access and manipulate very large databases. As Hoffman put it earlier this year, " I think automation may actually help people understand and comprehend massive changes that are happening in the marketplace. It allows the individual to have a lot more power than he's ever had."

1988 may well be recorded as the year of the strategic alliance, and certainly Sybase, which has attained a strong presence in the Pyramid workstation, DEC-VMS and UNIX worlds, emerged as the ally of choice for some of the biggest names in the micro industry: Microsoft and Ashton-Tate joined forces with Sybase to develop SQL-Server, positioned as the standard OS/2 relational database server; Apple, meanwhile, invested in the company as part of its strategy to get Macs into the DEC environment.

Dave Hughes

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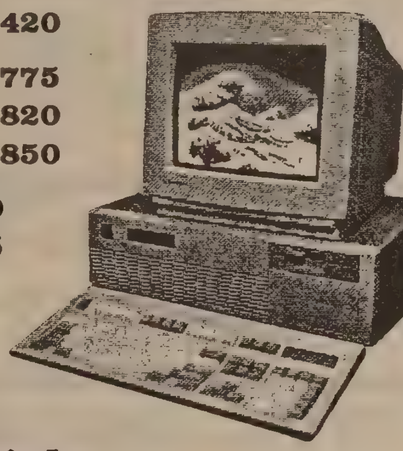

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Everex EGA Microenhancer Deluxe	150
Everex VGA Card	245
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Paradise VGA	259
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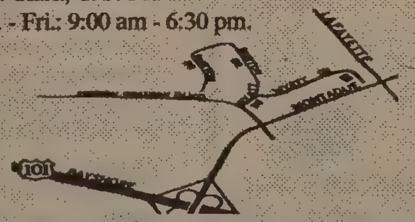

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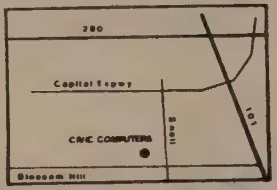

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MicroTimes 100

screaming into the Electronic Age (getting the entire city council online and networked, and the local Republican party modemized in self-defense), Hughes did not rest on his laurels this year. He launched Space Net at the United States Space Foundation, providing rural schools with online access to math, science and space experts in places like the Air Force Academy. He continues his quest for autonomy from the phone companies via packet radio. And finally, he succeeded in implementing a connection between Moscow's Novosti News Agency, the Tokyo-based Twics service, Chariot and a local magazine in Colorado Springs, by which questions, answers, essays and articles reach audiences that haven't been able to talk to each other too much in the past. "Already," says the indefatigable Hughes, "we have communicated with Cosmonauts, the Soviet Space leaders (inviting them to a space symposium in Colorado), and the head of the Academy of Sciences on environmental matters, Central Committee members on mutual global problems. We've let local reporters quiz the Soviet Press, and are arranging school-room to school-room telecomm links. We let the local public dial in and pose questions of their own—a construction worker asked why one can't buy Levi's in Moscow. We communicate at least weekly, and get turnarounds in two days."

We await next year's report with interest…

Steve Hui, *President, CEO and Director*

Everex

The somewhat retiring Hui, who's been known to characterize his company as a traditional Chinese family business, has led Everex in a intensive program of growth and expansion this year. Having previously specialized in peripherals and PC clones OEMed for other vendors, Everex began building (in Fremont) its own line of 386-based machines, and, by acquiring companies such as Abaton Technology, positioned itself to take advantage of emerging applications and markets.

Kiichi Hataya, *President, Industrial Electronics Business Sector*

Toshiba America

Despite a good deal of turbulence and political upheaval last year, Toshiba has continued to do a booming business and expand the operations of its US-based division. In particular, the year has been noteworthy for the phenomenal sales of Toshiba's laptop computers, which continued to provide a wide variety of power and price points to a growing number of business users. Hataya, who assumed the helm of the division from Kazuo Ishiguro last summer, continues to provide strong leadership and an emphasis on technical excellence.

Charles H. Jackson, *Founder, President and CEO*

Silicon Beach

For sheer diversity and excellence of Mac software, Silicon Beach is a hard act to follow, with games like *Dark Castle* and its successors as well as a full range of graphics products. Under Jackson's leadership, the company has maintained high standards of quality and innovation, and its products provide unprecedented capabilities in image creation and manipulation.

Bob Jacobson, *Consultant, Assembly Committee on Utilities and Commerce*

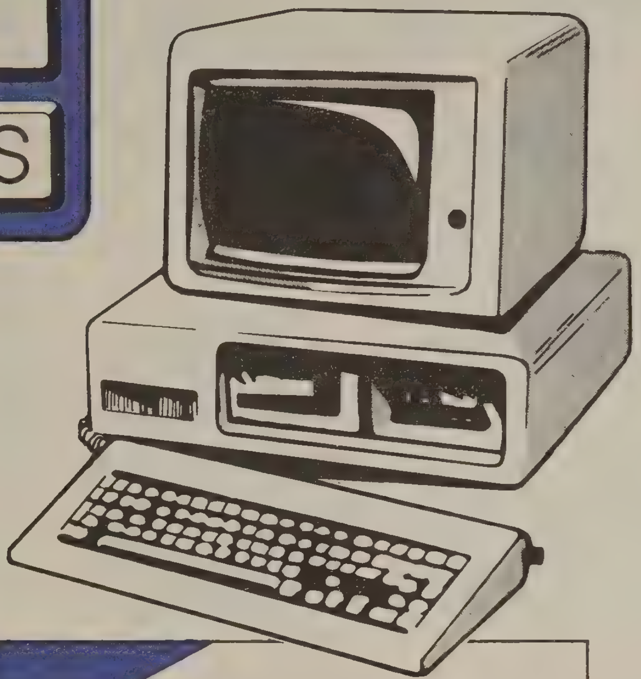
As a consultant in Assemblywoman Gwen Moore's office, Jacobson worked to increase public awareness of crucial issues affecting electronic communications. He was responsible for setting up the Capitol Connection BBS, a pioneering effort at electronic access to legislators. As the march of technology raises new questions of constitutional protections, privacy and access to technology, Jacobson provides a wealth of information resources and helpful advice to those exploring the potential of electronic democracy.

Ash Jain, *President*

Irvine Resource Group

One of the prime movers in AST Research's success in the Apple and Macintosh market, Jain left AST last year to found the Irvine Resource Group. His company serves as a business and market development consulting service, again with emphasis on the Apple market, and also publishes the Macintosh Market Report,

NORDIC COMPUTERS



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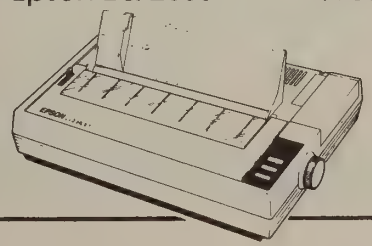

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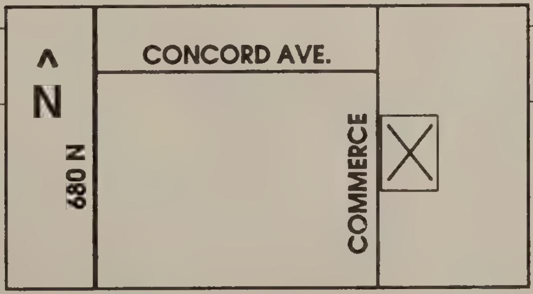

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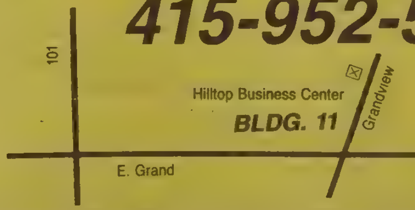

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Steve Jobs, *President and CEO*

NeXT

After gigabytes of speculation about the fabled NeXT machine, the world finally got its first look at Jobs' latest brainchild on October 12. This, in turn, spawned gigabytes of debate as to the machine's technical merits, its viability, and a host of other matters which will remain largely speculative until at least spring of 1989. While the NeXT, its Mach operating system, its read-write optical disk and Display PostScript visuals will probably be heatedly discussed for years to come, two things are clear: everybody seems to want one of the machines, and, for Jobs-boosters and -bashers alike, suddenly things are a lot livelier around the industry again. Meanwhile, many observers have noted that the notoriously temperamental Jobs seems to have matured considerably, fueling speculation that he's better prepared for the practical realities of running a company than in the days of his renowned caprices and tantrums at Apple.

Reese Jones, *President*

Farallon Computing

Several years back, BMUG president/cofounder Reese Jones unveiled the hacker's answer to AppleTalk networks—BMUGnet, constructed from standard phone-company parts and considerably cheaper than the Cupertino Solution. With the passage of time, Farallon was founded to market the product, rechristened PhoneNet, which is today a favored standard in Mac and TOPS multivendor environments. This year Farallon worked aggressively to expand and enhance its range of networking products, and continues to be among the best in the industry at providing quality, low-cost solutions to the problems of networked environments.

Bill Joy, *Vice President of Research and Development*

Sun Microsystems

As Sun aggressively expanded its operations this year, resident wizard Joy remained the most renowned spokesman for its core beliefs: open architecture, industry-wide standards and cooperation among vendors. He periodically emerges from the hallowed halls of R&D to address ever-larger audiences, with matter-of-fact aplomb, on the inherent evils of proprietary interfaces and the importance of standards for the health of the industry. Some observers have noticed with concern that Joy has been seen to wear a tie on some of those occasions, fueling speculation that Sun is Going Corporate.

Philippe Kahn, *Chairman, President and CEO*

Borland International

While this has been a somewhat turbulent year for Borland, with much-publicized restructuring and first-ever layoffs, Kahn has made considerable strides in bringing his company into serious competition with the likes of Lotus and Ashton-Tate. As Lotus continued to delay the release of the updated *1-2-3*, Borland's internally-developed *Quattro* won hordes of users away from the dated spreadsheet. Meanwhile, Borland's Ansa division enjoyed considerable success with its *Paradox* database and renewed its commitment to develop identical-interface versions across machine and operating system lines. And finally, the ebullient Kahn made it perfectly clear that he was still in charge of his maverick software house and was largely successful in resisting the encroachments of creeping corporatism into Borland's company culture.

Mitch Kapor, *Founder, Chairman, CEO*

ON Technology

As co-author of Lotus *1-2-3* and *Agenda*, Kapor has already distinguished himself as one of the founders and powers-that-be in the micro industry, and it's highly probable that the projects he's working on now at his new company will be at least as revolutionary. In retrospect, however, his most prescient and noteworthy accomplishment was probably that of dissociating himself from Lotus, a company he himself founded, because he didn't like the look of its general direction, particularly its look-and-feel lawsuit. Some of this year's events, including an apparently infinite series of delays in shipping *1-2-3*'s Release 3 and the abandonment of *Modern Jazz*, the update to the ailing *Jazz*, to say nothing of the interminable look-and-feel suit, suggest that Kapor made a wise decision.

On The Horizon

Some people and companies to watch in 1989:

Congressman-elect Tom Campbell won strong support from the high tech industry.

Tom Campbell, Congressman-elect, 12th District. As we reported last spring, the youthful Stanford law professor garnered strong support from the high-tech industry in his bid for election in the district which includes most of Silicon Valley. Such strong support that he managed the rare feat of bringing together Intel's Robert Noyce, Apple's John Sculley and Sun's Scott McNealy (the latter complaining about having to put on a suit on Saturday morning) at a press conference to endorse his candidacy. With his strong background in economics and lively awareness of trade issues, we look to Campbell to work for intelligent, progressive legislation affecting the computer industry.

Jack, Sam and Leonard Tramiel, Atari. The Tramiels have kept a relatively low profile this year, as have many of their announced-but-unshipped products. Perhaps their acquisition of the Federated discount chain has kept them more occupied than they expected. Nonetheless, their current crop of products has a seriously dedicated user base, and their fans eagerly await the advent of the fabled Atari transputer and other delights.

Roger Gregory et al., Xanadu Operating Company. Now part of Autodesk and enjoying some much-needed financial support, the Xanadu development team is hard at work readying their as-yet-unannounced first commercial product formarket and inviting inquiries from would-be developers of related products.

Todd Rundgren, Utopia Software. While we can neither confirm nor deny the rumor that Rundgren's designed a new Mac interface which greets the user with "Hello, It's Me" rather than "Welcome to Macintosh," we do know that interface design is one of his major interests and that he was showing off some neat stuff at the Hackers Conference. So we hope some of his efforts appear in a computer emporium near us Real Soon Now.

Guy Kawasaki, *President*

Acius

With the same fervor he brought to Apple's software evangelism program a few years ago, Kawasaki continues to guide his infant company and the evolution of its flagship product, *4th Dimension*. This year saw aggressive efforts to enhance the product and enlist the efforts of developers in creating third-party applications based on *4D*, making inroads in mainstream and niche markets.

L. William Krause, *President and CEO*

3Com

As networked and multiuser environments become an increasingly popular solution to the computing needs of many businesses, 3Com offered its customers increasingly diverse options, including the economical diskless 3Station terminals. It also supported a wide range of PS/2 and DOS applications, and offered a sophisticated range of options in PC-to-host connectivity.

David Liddle, *Chairman; President, Software Products Division*

Metaphor Computer Systems

As chairman and co-founder of Metaphor, which develops and markets workstations for data-intensive applications, Xerox PARC veteran Liddle has been a distinguished pioneer in the field of graphics-based user interfaces. This year, Metaphor entered into an agreement with IBM to exchange office systems technologies; under the terms of the agreement, IBM will incorporate Metaphor object-oriented technology into the interfaces it's developing for decision support applications running in all its computing environments, including OS/2.

William Lohse, *Group Vice President*

Ziff-Davis

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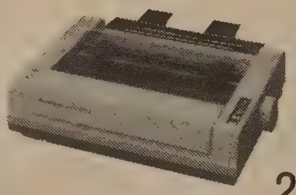

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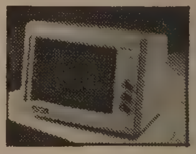

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influential publications, *PC Magazine*, *A+* and *MacUser*. These magazines provide timely and accurate product information to their readers and have become an important support resource in a rapidly-changing industry.

William C. Lowe, *IBM Vice President; President, Entry Systems Division*
IBM

As head of the Entry Systems Division, Lowe is responsible for IBM's personal computer and low-end workstation product line. While last year's announcement of the PS/2 line and OS/2 operating system, and the subsequent debate on the viability of both, contributed to a perception of Lowe as somewhat embattled, the intervening months seem to have gone well. This year he's had considerable success in winning acceptance of the PS/2 computers by dealers and users, as well as commitment to the OS/2 software environment by vendors of nearly all significant business applications. And while it's too soon to tell how well OS/2 will be accepted, the PS/2 line itself is doing very well, with three million units shipped, several new models unveiled, and Lowe insisting that such deviant standards as EISA are merely proof that IBM was right all along.

Marshall Magee, *Founder, President*
Magee Enterprises, Inc.
President, **Association of Shareware Professionals**

One of shareware's great success stories with the perennial hit *Automenu*, Magee offers continuing proof that great software doesn't have to be expensive. Not forgetting the thousands of satisfied users who find *Automenu* a life-saver, Magee, who started the company to put himself through college and is now something of a shareware tycoon, offers excellent support and a variety of creative purchasing options. Additionally, through the Association of Shareware Professionals, he works to advance the cause of high quality and customer support among shareware vendors.

Patrick McGovern, *Chairman*
IDG Communications

Perhaps the most noteworthy development of this eventful year for IDG was the company's work in bringing Western-style personal computing to the Soviet Union, and publishing the first issue of *PC World's* Moscow edition. The effort is expected not only to benefit the US high-tech industry by opening up new markets, but also to provide varied opportunities for better understanding between the two countries. Apparently the first issue of the Moscow edition was plagued by a few communication errors of its own—the Soviet editors pulled most of the advertisements on grounds of "redundancy," and McGovern was forced to make an unscheduled trip to the USSR to explain to his minions that that wasn't exactly the way things *worked.*

McGovern and IDG were also in the news this year for abandoning publication ventures that didn't measure up to their profitability standards; among the casualties were *Macintosh Today* and *Computer Currents.*

Brock Meeks, *Columnist*

In his coverage of telecommunications-related issues, from constitutional protections to the deregulation of the baby Bell companies, Meeks strives to increase awareness and understanding of these world-altering communications media and their implications.

John Meyer, *President*
Ventura Software

Back in 1984, Meyer and some of his colleagues at Digital Research started working on a desktop publishing software package. When DRI wasn't interested, they left to found Ventura Software and develop what was to become *Ventura Publisher*. The product's inherent quality and a marketing-distribution arrangement with Xerox have led to *Ventura Publisher's* acceptance as a standard in PC publishing. And despite the advent of *PageMaker PC*, the popular *Ventura Publisher* held its own this year in the DOS desktop publishing market, shipping Version 2 with new features and improved flexibility.

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Larry Michels, *President*
The Santa Cruz Operation
As office managers surveyed their huge investment in 286 DOS machines, assessed their need for more power and multiuser applications, and looked dubiously at the expense of migrating to OS/2, Michels and his minions smiled and sold them XENIX. Lots of XENIX, which, as the UNIX dialect of choice for Intel machines, enjoyed a banner year with the advent of 386 machines powerful enough to make use of its features, and probably eroded a considerable chunk of OS/2's future market share.

Gwen Moore, *State Representative*
In a protracted and heartbreaking battle, Assemblywoman Moore almost got ACA 36, the Information Age Bill of Rights, through the state legislature. In the face of erratic but forceful opposition and malign neglect, Moore fought tirelessly for ACA 36 and other significant legislation addressing constitutional and other issues involved in computer-based communications, and we wish her well in next year's battles.

Therese Myers, *President*
Quarterdeck Office Systems
With an extensive background in both management and system design, Myers runs Quarterdeck with forthright practicality and devotion to functionality, and a recognition of the connection between Quarterdeck's economic well-being and that of its users. Quarterdeck's flagship product *DESQview* offers a less expensive and very popular alternative to *Windows* for the PC-using population. Again this year thousands of users who want an integrated multi-application work environment without mortgaging their homes made *DESQview* a bestseller, and Myers continued to champion the cause of the power user without deep pockets.

Ted Nelson, *Distinguished Fellow*
Autodesk
After nearly three decades of derision and scorn, the "father of hypertext" began to garner some serious respect in relatively mainstream quarters last year as the technology began to catch up with his it's-all-connected vision of information publishing. This year saw the re-publication (by Microsoft Press) of his *Computer Lib/Dream Machines*, which brought Nelson's ideas to new audiences and the exuberant Nelson himself to scores of speaker's platforms. In a move that still has some analysts scratching their heads, Nelson's Xanadu Operating Company was acquired in April by Autodesk, the leading vendor of CAD applications for personal computers. Nobody seems to be quite sure what this means, but since the acquisition was accompanied by announcement that commercial product will ship within two years, it seems increasingly likely that Xanadu may soon lose its status as the world's longest-awaited vaporware. A more immediate result is that Nelson himself has migrated to California from Texas, and may soon set about the arduous task of recovering 30 years' worth of his writings, now scattered in storage lockers in four states.

The Second Annual Steve Jobs "What's NeXT?" Award

Well, the NeXT machine has materialized, rendering itself and Jobs ineligible for this year's award. However, we didn't have far to go to find this year's recipient: David Bunnell.

Bunnell, founder of *Personal Computing, PC Magazine, PC World, Macworld* and *Publish!*, who recently parted company with publishing giant IDG, announced his latest venture at the NeXT unveiling: Io Publishing. Io's first publication will be a campus newspaper for users of the NeXT workstation.

The name of the newspaper has yet to be announced at presstime, but we shouldn't have too long a wait this time: it's scheduled to start publication in January 1989.

Considerably before the NeXT machine ships, come to think of it. . .

Ed Niehaus, *President*
Software Entrepreneurs' Forum
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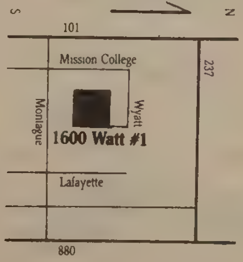

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ful publicist, Niehaus has been very effective at SEF this year, aggressively promoting networking opportunities and bringing new members to the organization in unprecedented numbers.

Raymond J. Noorda, *President*

Novell

Novell remained at the forefront of network technology, announcing numerous products and expanding its range of options. Perhaps most notably, it announced support of the Macintosh by its NetWare product line, thereby greatly strengthening Apple's ability to introduce Macs to the corporate world.

Peter Norton, *Founder and Chairman*

Peter Norton Computing

Between Dewar's ads, Norton continued to expand the scope of his software publishing. The perennial *Norton Utilities* were joined by numerous other versatile tools, and, in a move which may indicate expansion into new markets, Norton also acquired Dan Bricklin's award-winning *Demo II* program.

Robert Noyce, *Vice Chairman, Board of Directors*

Intel Corporation

CEO, **Sematech**

Long a distinguished figure in the high tech industry, Noyce co-invented the integrated circuit and co-founded Intel. This year, after having turned down the job repeatedly and thereby caused a long fruitless search for a suitable alternate, he was persuaded to assume the leadership of Sematech, a research consortium devoted to developing and strengthening US leadership in semiconductor manufacturing; his responsibilities include directing Sematech's manufacturing and support staff as well as serving as its primary liaison between member organizations and the federal government.

Michael Odawa, *President*

Software Development Council

With viruses much in the news this year, the Software Development Council was founded as a national alliance of regional software organizations intent on addressing the problem. Membership includes over 1200 software companies committed to increasing awareness of the genuine threat to the industry posed by the spread of computer viruses, which in the organization's view undermines product integrity, distribution channels, and the public's faith in the product. Under Odawa's leadership, the group's anti-virus strategy operates on a number of fronts, ranging from the development of virus-resistant programming techniques to the drafting of model "release a virus, go to jail" legislation.

Ken Olsen, *President*

Digital Equipment Corporation

Himself the subject of a just-released biography, *The Ultimate Entrepreneur,* DEC founder Olsen made headlines in January when he and other DEC executives joined Apple's John Sculley and Jean-Louis Gassee in announcing one of the year's most important alliances: a plan for both companies to develop improved links between DEC's VAX computers and Macintoshes. While DEC is a considerable presence in the corporate and workstation worlds, its attempts to penetrate the microcomputer market have never been successful; the agreement helped DEC in its ongoing war with IBM while providing Apple with a valuable entry point into DEC's markets.

Adam Osborne, *CEO*

Paperback Software

As the Lotus-Paperback look-and-feel suit dragged interminably on, Osborne managed to score a few points on his rival, not the least of which was shipping a substantially enhanced version of *VP-Planner* at a time when Lotus was busily announcing delays on the release of the new improved *1-2-3.* He also managed to direct a fair amount of public derision at Lotus for its obstructionist legal tactics in the suit. All and all, it was probably a far better year for little Paperback and its user community than it was for the long-suffering devotees of Lotus.

Theodore C. Papes, Jr., *President and CEO*

Prodigy Services Company

A long-time IBM veteran, Papes has presided over the joint IBM-Sears Prodigy venture since its inception in 1984. This year saw the vision become a reality, as the first of what Prodigy hopes will be millions of users dialed up the stylish, low-cost

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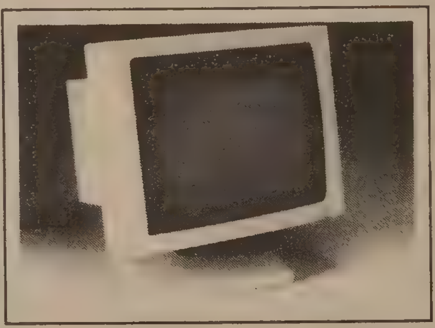

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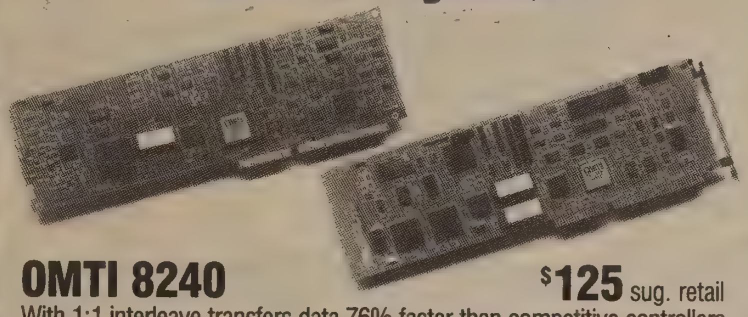

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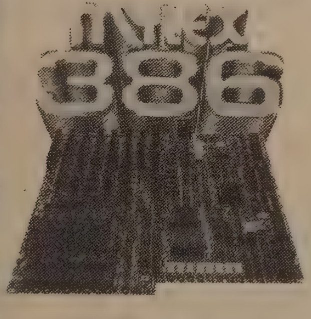

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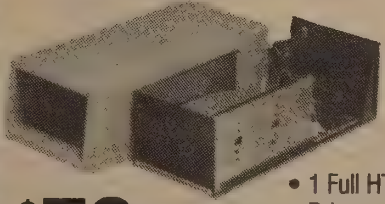

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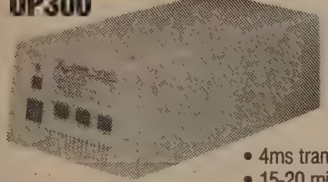

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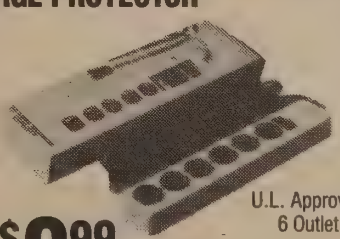

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telecommunications service, which offers a variety of information and diversion to its users and a growing client base to its advertisers. While it remains to be seen whether the French Minitel revolution can be duplicated in the United States, Prodigy's relatively mass-market appeal is likely to bring about a huge increase in computer-based communications for an increasing variety of uses.

Joseph L. Parkinson, *Chairman, CEO*

Micron Technology

This year Micron found itself in the nearly unique position of being a US manufacturer of suddenly-scarce DRAM chips. While the company made headlines in a legal dispute with Atari's Jack Tramiel over DRAM prices, its chief distinction was in having been in business and shipping product at a time when hardware vendors, desperate for memory chips, debated the pros and cons of building their own chip manufacturing facility. Parkinson himself also wields considerable influence over the development of future US chip technology as a board member of Sematech.

Glenn Patch, *Chairman*

Patch Communications

Patch founded *MacWeek* and this year entered into a joint publishing arrangement with Ziff-Davis. *MacWeek* enjoyed the distinction of winning the war of the Macintosh corporate tabloids, as PCW/IDG's *Macintosh Today* stopped publication this summer. Unlike its rival, *MacWeek* was the first magazine of its kind and was able to become a weekly early on; consequently it attracted a wide audience and a broad base of advertisers *Macintosh Today* (perhaps hampered by insufficient differentiation from its sibling *Macworld*) was never able to match.

H. Ross Perot, *Venture Capitalist*

Member, Board of Directors

NeXT Inc.

Probably it will never be known how much the infusion of Perot's capital had to do with getting the NeXT workstation off the Perpetual Vaporware list, but it probably didn't hurt. The alliance of the mercurial Jobs and the pragmatic Perot will profoundly affect the evolution of workstation technology and the future of the industry itself.

Aubrey Pilgrim, *Author*

One of the true latter-day heroes of the computer revolution, Pilgrim is beloved by thousands of readers who take the advice of his books and articles to build their own computers and save a bundle. His book on building your own PS/2 clone is eagerly awaited.

Dan Pote, *President*

Applied Engineering

Again this year, Pote's company, which specializes in cards and peripherals for the Apple II line, succeeded in marketing and supporting products which continue to stretch the II's capabilities beyond anything Steve Wozniak envisioned—not the least of which was the ability to run DOS software.

Jerry Pournelle, *Columnist*

Opinionated and often unabashedly cranky, Pournelle nonetheless is a tireless user advocate and one of the industry's most active gadflies. His Chaos Manor column is a staple in the lives of computer users nationwide, and his annual rambling discourse at the Computer Faire draws standing-room-only crowds for a sardonic account of the stupidities the industry insists on foisting on an unsuspecting populace. To the bemusement of many observers, no such skepticism attends Pournelle's views on SDI. . .

Abraham Poznanski, *President, Micro Products Division*

Computer Associates International

Like many software houses with corporate customers, Computer Associates was increasingly active in the microcomputer world this year as power and connectivity became key issues. It offers a variety of sophisticated project management, accounting and financial packages, including the *SuperCalc5* spreadsheet, designed to work well with outside applications such as *1-2-3*. Poznanski, who had previously served as senior vice president of corporate

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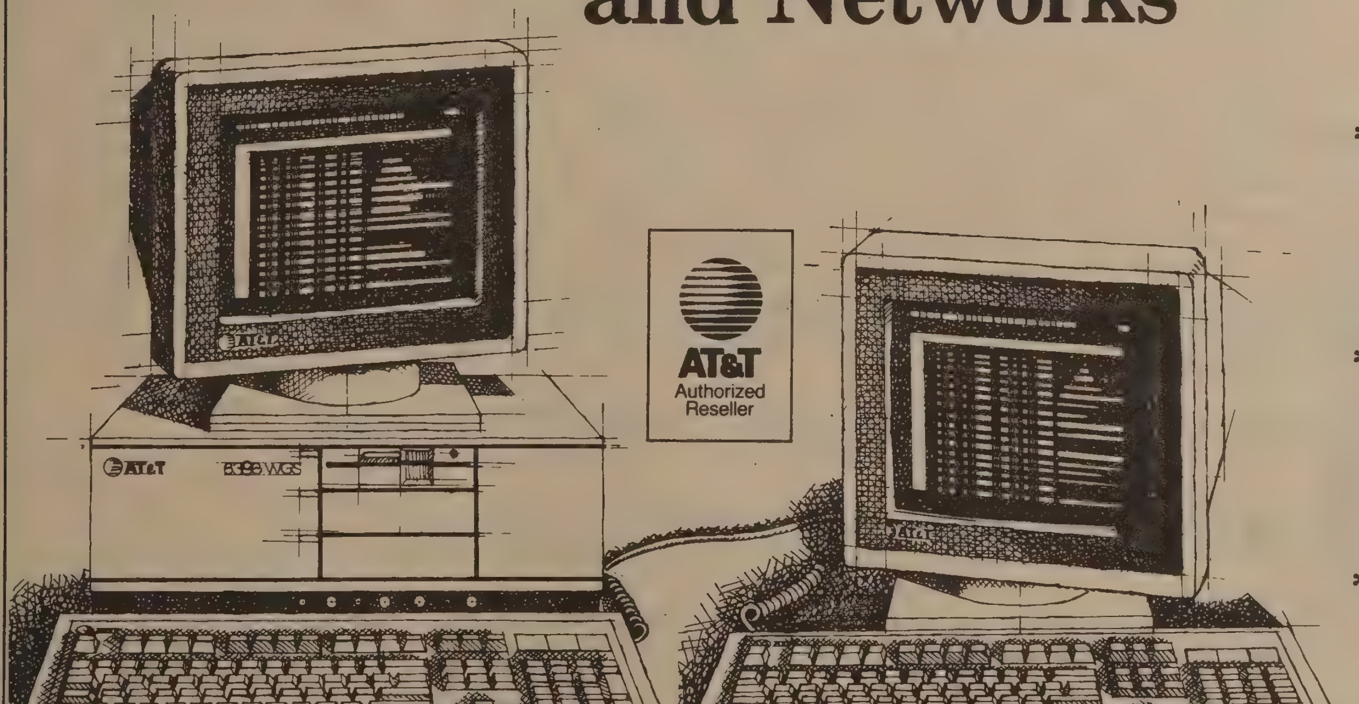
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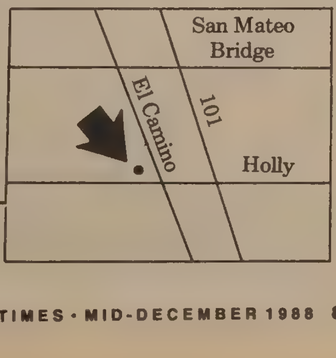
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services and CFO of the company, combines business skills with a strong interest in the microcomputer software industry, assuring Computer Associates of increasing prominence in a variety of business environments.

Albert Wong, Safi Qureshey, Thomas Yuen, *Founders*

AST Research

In a remarkably short period of time, AST's founders have achieved a remarkable diversification and repositioning of their company. Once known chiefly for its enhancement boards, the company is now also a leading vendor of PC clones, laser printers and other tools for the business environment. As we were going to press, the 39-year-old Wong announced his resignation from AST to pursue other interests, but retains his seat on the board of directors and substantial stock in the company.

John Roach, *President, CEO, Chairman of the Board*

Tandy Corporation

Further entrenching itself as a respected supplier of serious business machines, Tandy announced a variety of strategic developments this year in several areas of the microcomputer marketplace. It announced both PS/2 clones and its support for the non-Micro Channel EISA standard. It created a considerable stir by being the first to announce development of a read-write optical disk (though a ship date is not expected until at least next year). And, not forgetting its hobbyist roots, it offered its DeskMate operating environment, which unlike *Windows* does not require large amounts of power and memory, as a standard interface for PC applications. Targeted at the home and small business market, DeskMate was enthusiastically adopted by a large number of vendors and will undoubtedly contribute significantly to increased sales of low-cost PCs and the software they run.

Heidi Roizen, *President*

T/Maker Company

President, **Software Publishers' Association**

As publishers of *WriteNow*, the NeXT workstation's built-in word processor, T/Maker received a fair amount of attention for its future contributions to the industry. For the rest of the year, though, it was business as usual, as Roizen, partner Royal Farros, and their small, dedicated company continued to set an example to the industry with excellent products and support and a clear sense of their own direction. As this year's SPA president, Roizen also worked to promote uniform standards and other policies designed to facilitate and streamline the development and marketing of quality software products.

Ben Rosen, *Venture Capitalist*

Sevin Rosen Management

Instrumental in the Borland/Ansa merger of last year, Rosen continues to be profoundly influential, bringing an extensive repertoire of practical business experience to bear as the company weathers the hazards of growth and transition and works to meet the requirements of a new and diverse customer base.

Edwin Rutsch, *Author*

With his series of clone buyer's guides (XT, AT and 386), Rutsch provides sound, lucid advice to the confused shopper and a valuable resource to the bewildered user. His books (themselves a testimonial to desktop publishing) make a great contribution to the industry by making it vastly easier to make informed buying decisions, as well as to be productive with your machine after you've bought it.

Keith E. Schaefer, *Vice President and General Manager, Computer Products Division*

NEC Home Electronics (USA) Inc.

For several years Schaefer has led the Computer Products division, which includes monitors and other peripherals as well as the best-selling MultiSpeed laptop computers. He's maintained high standards of product quality and customer satisfaction as the parent company in Japan continues to supply innovative technology from CD-ROM drives to superior display monitors.

John Sculley, *Chairman and CEO*

Apple Computer

Apple enjoyed phenomenal success this year, with heavy demand for its Macintosh product line and a resurgence of interest in the deathless Apple II. Sculley's vision of "one person, one computer, connected to the world" became increasingly real as Apple announced many alliances with and investments in strategically important companies. Meanwhile, Sculley's agreement with Bill Atkinson to give *HyperCard* away with all Macintoshes was rewarded with a cornucopia of applications and maniacal user devotion. True, there were a few snakes in the garden: the announcement of Apple's whopping price increases at year's end weren't received at all happily, a seemingly endless process of growth and restructuring often left Apple employees dazed and confused, and the vaunted A/UX is still balking at running Macintosh applications. But even in the year of the unstoppable Mac nothing's perfect.

Trends and Patterns

The composition of this year's list of luminaries reflects some interesting trends and common denominators.

For instance, there's a dramatic upswing in commerce and cultural exchange with the **Soviet Union.** IDG set up a publishing venture, Dave Hughes set up a telecomm link and Sphere brought *Tetris* to US audiences.

The fight against **viruses** was a significant issue for users and vendors alike this year; Don Brown and Mike Odawa worked on the defenses, and Marc Canter achieved unintended notoriety for inadvertently spreading the Peace Message around Aldus.

Xerox PARC technology continues to have significant impact, and it's usually somebody other than Xerox who's reaping the rewards. Interface technology for Macintosh, Metaphor and NeXT all come from PARC, to say nothing of Adobe's PostScript. On the other hand, in the case of *Ventura Publisher,* Digital Research's loss was Xerox's gain.

Not surprisingly, considering the advent of powerful 32-bit microcomputers, **UNIX** vendors are much in evidence. Twelve of the industry leaders on this year's list are involved with the development and marketing of UNIX hardware and software.

Likewise, as **connectivity** becomes an increasingly significant issue, multivendor environments are becoming more common. Twenty-six of the hardware and software companies on this year's list offer products for a variety of platforms and machine types.

Jonathan Seybold, *Publisher and President*

Seybold Seminars

The leading desktop publishing expert continued to drive the ever-greater growth of micro-based publishing applications this year. His seminars and trade shows are a valuable resource in providing quality, in-depth analysis and information as well as in bringing state-of-the-art products to potential customers.

Stan Shih, *Chairman, CEO, President*

Acer

According to its annual report, Acer's chairman compares his business strategy to the ancient game of GO. "Long-term strategic moves and territory gains are objectives of GO. Applying similar principles to business, he goes one step further to aim for stable, long-term growth." As head of Acer (formerly Multitech, Taiwan's leading clone vendor), Shih has made a variety of strategic decisions and acquisitions to create a large, diversified company, a current leader in the PC clone marketplace which is now expanding its operations into the UNIX, PS/2 and networking arenas.

Roger Sippl, *CEO*

Informix Software

A/UX might be in much better shape today if Steve Jobs had had fewer sartorial prejudices back in the '70s. Programming wizard Roger Sippl, newly graduated, went for an interview at Apple, but his unfortunate decision to wear a suit to the interview caused Jobs to think he must not be a real programmer. So Sippl went on to Cromemco and later went on to found Informix (originally Relational Database Systems) in 1980. Since then the company's grown to a prominent position in the world of relational databases, offering versatile, high-performance software products in environments from mainframes to supermicros. As UNIX becomes increasingly significant in the micro world, Informix is becoming a significant presence in micro-based environments, notably with an announce-

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ment of A/UX versions of its products. In a further move into the Macintosh market, Informix also acquired the revolutionary new spreadsheet *Wingz* and its parent company.

Wayne Smith, *Southern California District Sales Manager*
Atari

It's been a somewhat lackluster year from Atari, with not much in the way of product announcements and not much in the way of shipping many of the products announced last year. But if the company as a whole was in the doldrums, its Southern California sales were booming as Smith succeeded in positioning Atari machines as the musician's computer of choice. Working closely with dealers, Smith used an extensive advertising campaign in professional music magazines and a highly successful seminar on "Introduction to MIDI" to acquaint potential users with the power, flexibility and ease of use offered by Atari computers. One of Smith's most telling points: "Perhaps the nicest thing about an Atari is how little it costs. With what you save on an Atari you can buy yourself a synthesizer and some software."

Max Toy, *President*
Commodore Business Machines

With characteristic common-sense approaches to problem-solving, marketing and customer responsiveness, Toy has made remarkable progress in turning the long-floundering Commodore around in his first year as president. Thanks to shrewd moves like bundling the GEOS operating system with disk drives, thereby vastly enhancing the utility of the 8-bit C64 and 128 machines, and an aggressive trade-in-for-Amigas campaign, sales are booming and the Amiga is enjoying unprecedented prestige and popularity.

Rene Vishney, *President*
Award Software

As a leading supplier of BIOS and system software for PS/2, 386, 286 and XT-based systems, which it supplies to OEMs and hardware vendors, Award has a significant impact on the evolution of standards and the development of effective business systems.

John Walker
Autodesk

Among Walker's various noteworthy achievements this year, two stand out. In a move that was startling but probably a very good thing for Autodesk's future product line, Walker resigned the chairmanship of the company he cofounded because he wanted to go back to developing new products. Also, he was instrumental in bringing about the acquisition by Autodesk of Ted Nelson's Xanadu hypertext project; when astonished observers commented on the sheer incongruity of the relatively staid CAD company's sudden interest in what was widely considered the longest-running crackpot vaporware project since the Do-What-I-Mean machine, Walker mildly pointed out that, after all, when Autodesk set out to do CAD on a PC, that, too, was considered crackpot vaporware. We await the results of this alliance with interest.

Bob Wallace, *President and Owner*
Quicksoft

Wallace and his intrepid programmers continue to work diligently to make *PC-Write*, the shareware word processor of choice, better and more powerful. They serve as a shining example of excellent product and excellent customer support.

Ken Wasch, *Executive Director*
Software Publishers' Association

Under the leadership of founder Wasch, the SPA was active this year in addressing the problems and helping the efforts of its members, as well as increasing general awareness and appreciation of the industry. In addition to educational and promotional efforts such as Computer Learning Month and the annual SPA Awards, the SPA this year scored a significant victory against software piracy in court cases involving dealers who illegally provided copies of applications with hard disks. ☐

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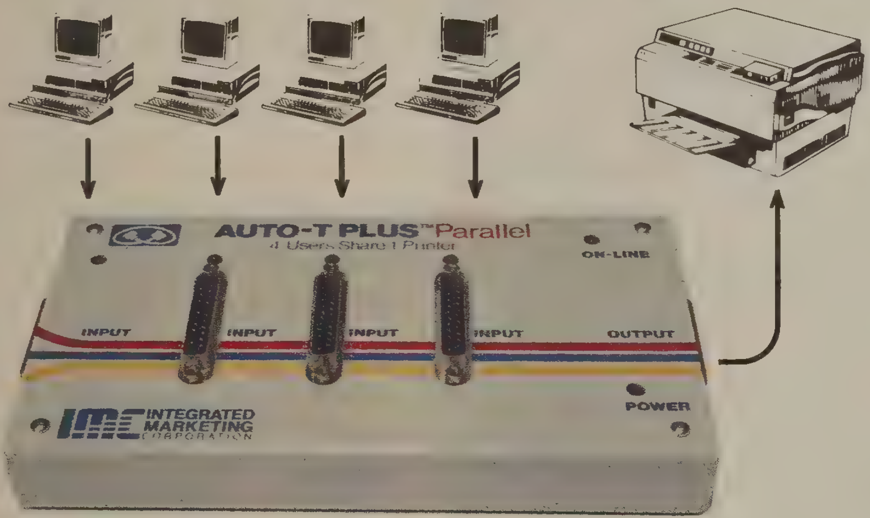
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By Sharon Fisher

Don't call the WELL a bulletin board. It's like calling San Francisco "Frisco." It sets people's teeth on edge, and they immediately get all defensive and start explaining earnestly why it's *more* than a bulletin board and what an unmitigated boor you are for calling it that.

On the other hand, if you ask users of the WELL what it should be called, you'll get as many different answers as there are users. "An electronic Paris salon." "The corner bar." "The virtual village green." "An electronic coffee shop." "A multi-thematic, interactive, living magazine."

Obviously, this is a pretty special bulleti—Oops!

What The WELL Is

WELL stands for Whole Earth 'Lectronic Link. The Sausalito, California-based organization was founded in 1985 by Stewart Brand and the same people who brought you the *Whole Earth Review.*

Originally, it was hoped that businesses looking for a cheap way of providing electronic mail would flock to the WELL. While some businesses do in fact use the WELL as an integral part of their operation, the timesharing functions generate far less traffic than the conferencing/conversation that became the system's unique strength. The WELL has become popular enough with users in Northern California—not to mention a significant number of users from other states—that it essentially breaks even financially most months.

About 2,300 people use the WELL, more than 1,600 of whom are paying customers, according to John Coate, one of the system administrators. (There's a chart on the wall in WELL headquarters showing the number of users, with annotations at particular low points, such as "Nice day.") The rest get some free time by hosting conferences, working at the *Whole Earth Review*, and so on. About half of these paying users log in frequently, and some 200 of them log in every day, says Coate, accounting for an average of 225 user hours on-line every 24 hours.

Some of these people are what might be called "famous," especially in the Bay Area. Non-famous users agree that the "famous" users act and are treated just like everybody else, and that's generally true—there's remarkably little groupieness on the WELL. Among the WELL's resident "celebrities": *Whole Earth Review* publisher Stewart Brand; Jon Carroll, columnist for the *San Francisco Chronicle*; Dr. Flash Gordon, director of the Haight-Ashbury Free Clinic; David Gans, author of *Playing in the Band* and producer of the syndicated "Grateful Dead Hour" radio show; *New York Times* writer John Markoff; and author Howard Rheingold.

The WELL resides on a Digital Equipment Corp. VAX minicomputer running a conferencing system called PicoSpan, affectionately (or, sometimes, not so affectionately) called names like PicoSpud by some users.

What's In The WELL

But what's important is what goes on in the WELL. Unlike many bulletin boards, which often seem to consist mainly of software to download and discussions of computer-related topics, the WELL consists mainly of long, free-flowing, wide-ranging discussions on dozens of "topics" among more than 100 "conferences." And conferences that contain more than 100 topics—each of which can have dozens of responses—aren't unusual.

Unlike services such as CompuServe, where often only about 400 responses are on-line in a conference at one time before "rolling over," a WELL discussion can last for years, and is still available for reading long after the discussion has run its course.

Although the WELL runs on a computer, and does feature many conferences on computer-related subjects, a large number of the conferences aren't computer related at all.

Two extremely popular conferences are Sexuality and True Confessions. These discussions can range from the sublime—Love and Grace, or painful stories about the abuse one has suffered as a child—to the ridiculous—which way to hang the toilet paper or favorite junk foods. Users often marvel at the freedom with which they reveal fairly intimate details about their lives to large numbers of people—some of whom they've never met face-to-face—but in general the trust is not misplaced.

Other popular non-computer conferences include Politics, Jewish and Weird—which really is.

But no discussion on the WELL would be complete without mentioning the large part that the Grateful Dead and their fans ("Deadheads") play on the WELL. Six of the WELL's most active conferences are dedicated to GD-related activity—trying to obtain tickets, exchanging tapes, or commenting on the band's concerts, records and actions. And the founders of the WELL freely give credit to

Getting On The WELL

Unlike many local bulletin boards, the WELL isn't free. On the other hand, compared to services such as CompuServe or BIX, it's cheap: $8 per month, plus $3 per hour.

You join the WELL like this (have a credit card ready). Dial (415) 332-6106 using 7 bits, 1 parity bit and even parity. When the modem connects, it'll ask you to log in with your ID or with "newuser" if that's what you are. Just type newuser. The system will ask for an ID, and then how you will pay. You'll get a manual in the mail.

In addition to giving a credit card number, which is billed monthly, you can also pay by other methods, such as by check.

For long-distance members, the WELL is available via the CompuServe Packet Network (similar to Tymnet or Telenet) for about $5 per hour additional. South Bay users can access it through a low-cost packet service called PPN for an additional $3 per hour. For details on these access and billing methods, call the WELLmanagement at (415) 332-4335. (Tell them you read this article.)

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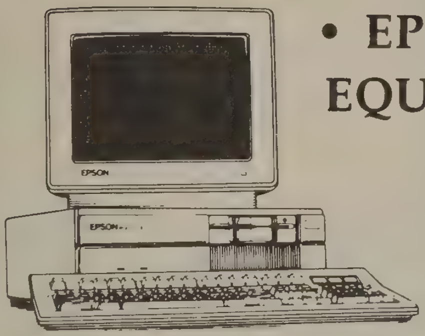

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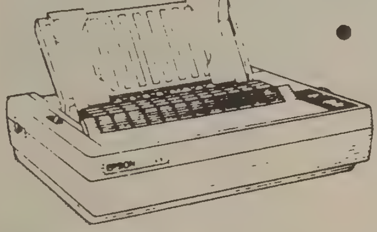

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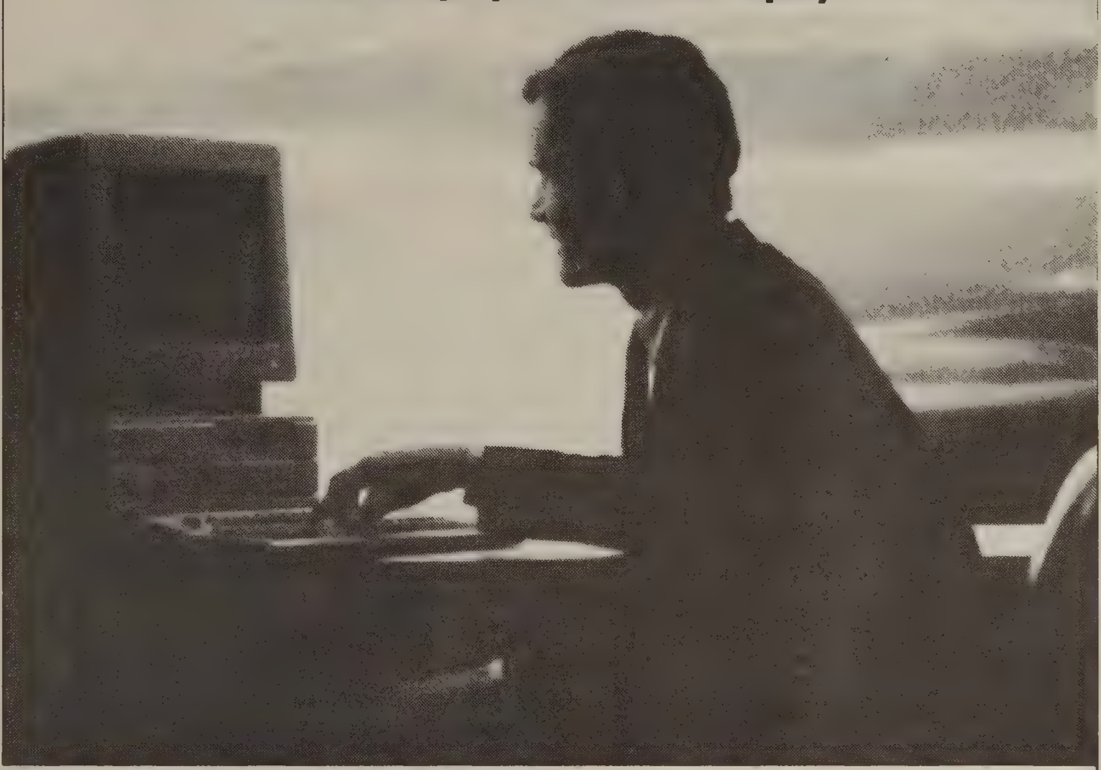

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the Deadheads, not only for being a large new community of users, but for being garrulous as well.

"The Deadheads came online and seemed to know instinctively how to use the system to create a community around themselves," says Matthew McClure, one of the WELL's founders.

Computer-Related Conferences

As might be expected from any computer-based bulletin board—especially one located not far from the Silicon Valley—computers and various computer-related issues are an important part of WELL conferences and discussions. Popular computer-related topics include the Macintosh, Telecommunicating, the IBM PC and the Amiga.

But WELL discussions are as likely to focus on the social issues as on the technical ones. This is especially true in the Telecommunicating conference, as well as the closely related Info conference, both of which have focused on topics such as First Amendment issues in electronic communications.

On the other hand, technical issues are often discussed in great depth. Many Macintosh developers hang out on the WELL exchanging programming tips. And the Telecommunicating conference featured so many detailed critiques of the Prodigy system, being developed by a cooperative venture of Sears and IBM, that Prodigy developers themselves began to visit the WELL, both to answer the detailed questions and to pick the brains of a group that had formed the type of community the Prodigy people hoped to develop.

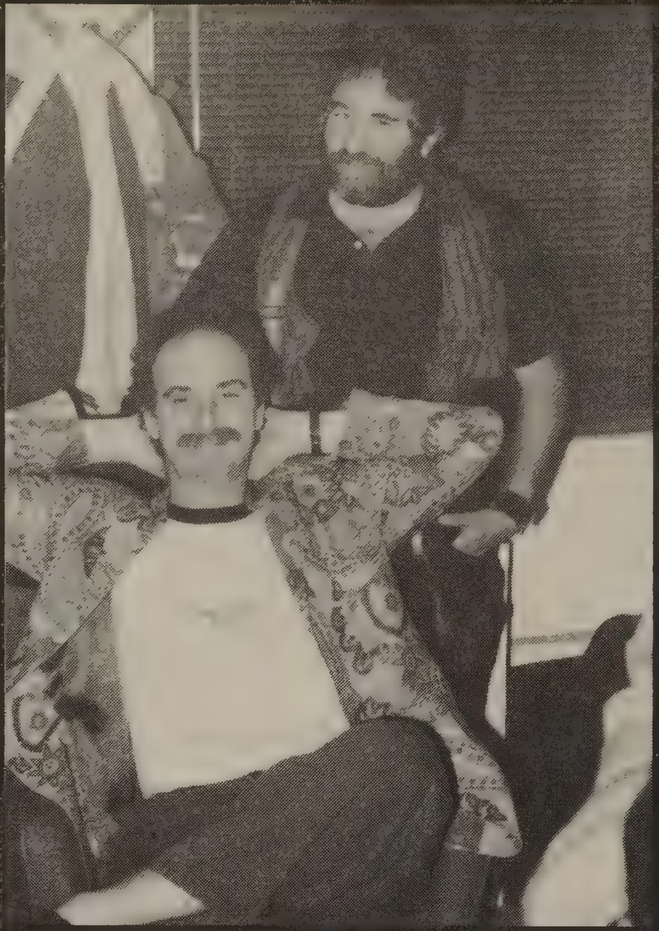
Other Well Features

The WELL has a number of other features for its users. For example, it's a node on the Internet. While the Internet is mainly famous now for being the network struck by a worm, it also allows users to communicate via electronic mail with UNIX users all over the world.

In addition, the WELL serves as a Usenet gateway, which means that users can read the more than two megabytes a day of commentary and information that comes in via the net—a larger, but less personal, source of information on many topics.

WELL users can also communicate with each other via electronic mail and several real-time "chat" facilities, where two people on-line can send each other messages. While this isn't an efficient method of communication, it can be fun. A less-used feature is the ability to have on-line discussions (much like Compu-

Suddenly, the room isn't full of strangers any more; just friends that haven't met yet. And that's really what the WELL is all about.



Wellbeings Flash Gordon (top) and Howard Rheingold relax at a recent WELL party.

Jennifer Avian and Wellbaby Camille check out the Parenting conference.

John Coate, one of the WELL management team, is often the Voice of the WELL when users call the office.

PHOTOS: MARY EISENHART

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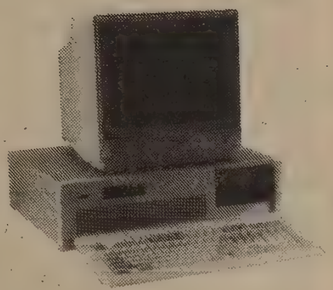

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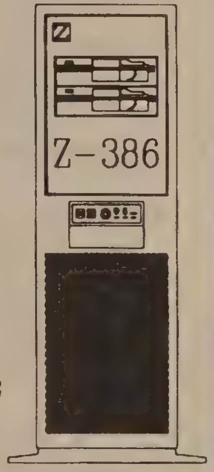

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Serve's CB feature) where a larger number of users can see each other's messages in real time.

The WELL's Social Life

The way in which the WELL is probably most different from any other system is the social life that revolves around it. To begin with, there's all the Grateful Dead concerts and Deadhead parties, for which the WELL often serves as a clearinghouse.

In addition, there's a number of regularly scheduled events, not to mention all the random parties. A group usually gets together somewhere in the East Bay or San Francisco every Saturday or Sunday for brunch. On "Odd Sundays," another group gets together in bars. There's the annual WELL picnic, held in the early fall. And last—but certainly not least—there's the monthly WELL office parties, held in the Sausalito offices.

There's always somebody at one of the WELL "face-to-face" (or f2f) events who's never been to one before, but who's been using the WELL for a while. At first, they're a little taken aback—they're in a roomful of strangers! But then they start talking a little with people, and realize that they really do know most of the people there. Suddenly, the room isn't full of strangers any more; just friends they haven't met yet. And that's really what the WELL is all about. ■

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Commonly Used WELL Terms

flame: When one person yells electronically at another, usually about a matter under debate. A flame can be of varying intensities. Personal flames—attacks on other people, rather than on their views—are discouraged. In a few highly personal conferences, such as True Confessions, flames are not allowed.

host: Each conference has a couple of people who moderate the discussions and perform housekeeping chores such as freezing topics (see below). These people are called hosts. They're also occasionally referred to as "fair witnesses," from the original WELL term used for that function. The term, which derives from the Fair Witness concept in Robert Heinlein's novel *Stranger in a Strange Land*, is used because the host isn't supposed to judge the content of conferences—just manage them.

Mandelism: As with any conversation, people can get sidetracked. But people often get annoyed when a discussion takes off on an unexpected tangent or degenerates into silly puns. Mandelism—named after longtime WELL user and referee Tom Mandel—means steering the discussion back to its original topic.

frozen: When topics get to be about 100 responses or so long, performance starts degrading. Consequently, at this point, the discussion is "frozen," meaning it can still be read but can no longer be responded to. If there's still life in the discussion, a second (or third, or fourth) topic on the same subject can be started. (Incidentally, anyone can start a new topic.)

forget: Being confronted with several hundred topics per conference, each with its dozens of responses, can be overwhelming. If there's a topic you're not interested in reading, you can "forget" it, and you won't be notified about new responses to that topic. (You can always "remember" a topic again.)

retired: Sometimes, usually because of age, a topic (usually one that's been previously frozen) is "retired," meaning it's no longer listed as one of the topics under discussion. However, you can specifically ask for a list of retired topics. Like reading old newspapers, reading retired topics can be fascinating.

censored/censored and scribbled: Sometimes we say things we don't mean. Unfortunately, when they're stored on disk, they can stay there forever for everyone to see our momentary stupidity (or inarticulateness). You can delete one of your responses by "censoring" it. No one can delete your responses except you (with the exception of the conference host). "Censored and scribbled" means not only that the response has been removed, but that it's been electronically modified so that nobody can read it. It's like the difference between erasing a floppy disk and re-formatting it. ■

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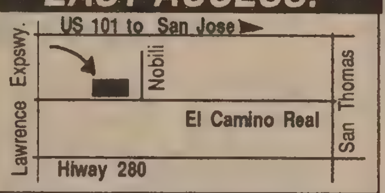

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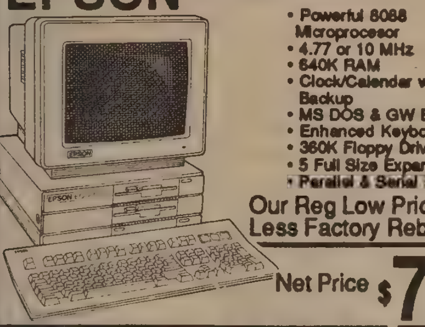

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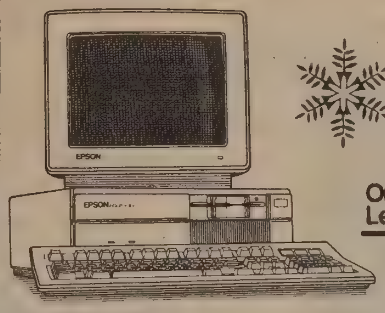

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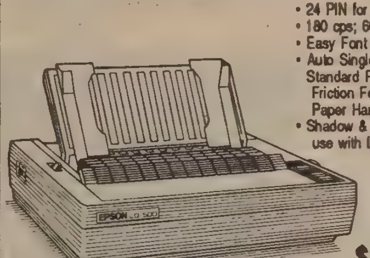

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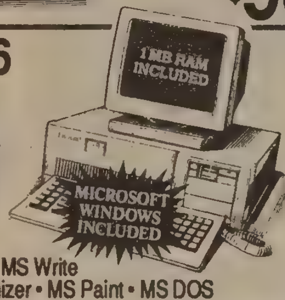

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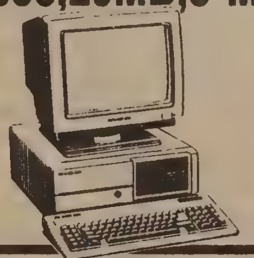

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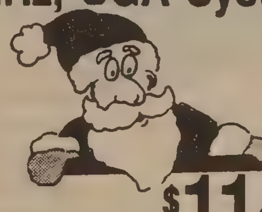

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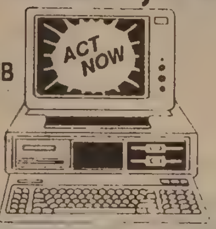

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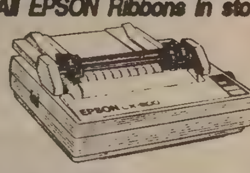

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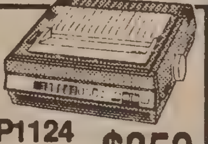

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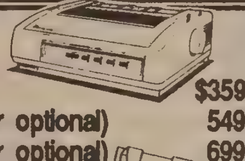

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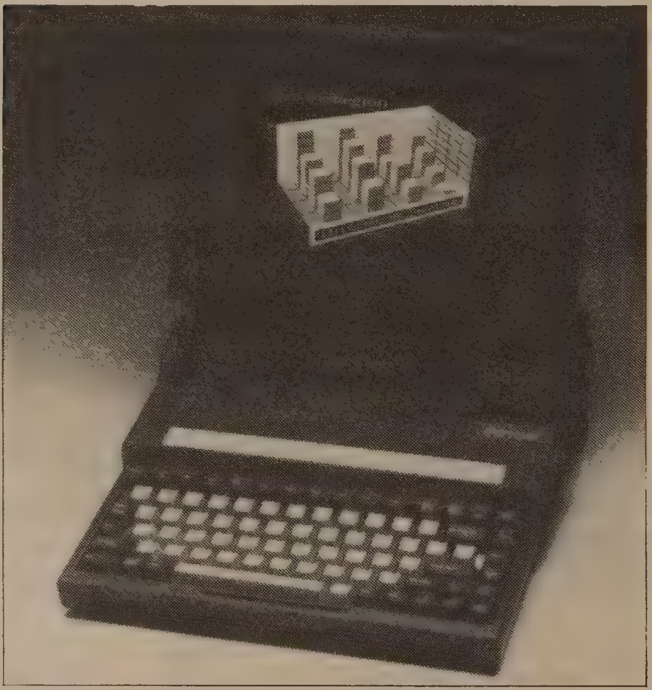
The Toshiba T5100—386 Power To Go

By Jeff Spurrier



Toshibas 386-based T5100 offers performance and portability as well as an EGA display—for a hefty $7199.

Throughout my computing life I've looked upon laptop computers as playful and somewhat sporty additions to my drab desktop world. Thanks to the sexy little pop-tops, I was no longer chained to my chair. I could write anywhere—on trains, in the park, at the beach. And then, once I'd had my fling, I could come home to my trusty overweight desktop to rework whatever I'd accomplished out in the exciting world of portable computing. The laptops were fun, but nothing I'd want to spend the majority of my writing career with. They were, after all, only laptops.

But with the arrival of the Toshiba 5100, things aren't that simple anymore. Weighing in at 15 pounds, the upper limit of what I consider acceptable for portability, the T5100 has raised the ante for its rivals in the increasingly crowded high-end field with a standard package that includes a 16 MHz 386 processor, a 40Mb hard drive, a 1.4 meg high density 3.5" floppy, two megs of RAM and an EGA 640 X 400 pixel gas plasma display. All this in a 12.2" wide by 14.2" deep by 3.5" high machine.

Getting Started

My machine arrived with the hard drive formatted, so it was simply a matter of seconds before I was up and running, downloading the entire contents of my Everex AT into the Toshiba with *Flying Dutchman*. Using the Test 3 program on the Toshiba DOS 3.3 utilities disk, I could easily fiddle with the machine's setup configuration, altering the screen display, the division of memory into expanded memory, enhanced memory or fast ROM.

The 40Mb hard drive was whisper quiet, as was the 1.44Mb diskette drive. The hard disk has 29 ms access, according to Toshiba; using Coretest I came up with the following numbers: Data Transfer Rate: 239 Kb/sec; Average Seek Time: 38.6 ms (804 cyls); Track-Track seek: 6.1 ms; Performance Index: 2.846. It was far faster than any other laptop I've seen, although the Compaq 386 now boasts a 20 MHz processor.

I had no problems getting anything to run, from *Carousel* to *Tornado Notes* to *WordPerfect 5* to *Procomm* to *Vopt*. The version of *Windows 386* specifically designed for the Toshiba booted up perfectly.

The 82-key keyboard of the 5100 is slightly soft to the touch and somewhat cramped, especially for my rapid-fire three-finger approach, but the layout is great. It's easy to use the Fn key to duplicate any key code possible on a larger 101-key keyboard. The fact that the numeric pad was embedded was not at all a hindrance for me. Overall, I liked it a lot and felt comfortable with it immediately.

About That Screen...

It took a bit longer to get used to the gas plasma EGA display, however. Sure it was bright, amazingly fast (far speedier than any other display I've seen on a laptop) and crisp as a razor's edge. But I found myself irritated by the orange- brown background; I wished that it were darker or a different color. The brightness of the screen and the inability to adequately duplicate colors—merely three shades of orange/red—meant that when I loaded certain programs—*XTREE Pro*, for example—the screen was a mess of brilliant uncontrasted glare. That problem was easily dispelled; I loaded a Toshiba supplied display utility called XCHAD into memory and then, whenever I was confronted with a display contrast irregularity, I'd merely have to hit two keys to improve things dramatically. Annoying but functional—usually. XCHAD did little to improve *WordPerfect Library*'s menu, and it became obvious that certain programs would have to be tailored for the gas plasma screen.

A few final gripes about the screen. It's not removable, which means that when you're hooked up to an outside monitor, you'll have to work with the Toshiba's screen propped open in front of you. And finally, Toshiba should really do something about the spring operated latch on the screen. Whenever I moved the machine around, the screen was constantly popping open at inopportune times.

Design, Support, Etc.

Moving around to the back of the machine you'll see the typical ports: external monitor, serial, parallel. There are some changes back here, however. The parallel port is also used as the port for an optional 5.25" drive so you can't have both hooked up at once. Also there's a slot to the left of the ports where either a modem or an external expansion chassis (capable of holding five boards) can be situated. The port for the optional 101-key keyboard is located on the side.

The 5100's handle slips over these back ports when the machine is in its case and then pops out when its being used as a handle and finally slides down to be used as a height prop. Another clever design addition is the auto voltage sensing power supply, which means you can travel without having to worry about what the voltage set-up is—the machine will adapt itself.

The three-book documentation package that came with the 5100 was everything I've come to expect from Toshiba: thorough, well laid out, intelligently written and accurate. The "First Time" booklet walked me through the machine initially; then I could rely easily on "The Portable Companion" for any follow-up questions.

As with all Toshiba laptop computers, the 5100 comes with a one-year warranty and automatic enrollment in the Exceptional Care Service program. Under this program, if your machine breaks down, Toshiba will send you a new one within one day after they receive yours at the factory. Then you can either keep the loaner or else get your old (repaired) machine back. The Toshiba toll-free support line is generally easy to access, and the Toshiba bulletin board (in Saddle Back Valley) is one of the best around.

When it comes to the human element, Toshiba has most of its rivals beat handily.

The Bottom Line

The bottom line, of course, is finally the price. At $7,499, the 5100 is not the sort of machine you'd leave lying around on the back seat of your car. But with this kind of power under your hood, why would anyone use this computer just for traveling? It's obviously designed to be one's only computer—sleek, sexy and a great cook and homemaker.

And Toshiba obviously thinks this is the direction of the future. They've just announced the 5100's big brother: the 5200. This 18.7 pound behemoth will have internal slots for expansion cards, VGA graphics, a 91-key keyboard, hypertext software, and a choice of hard disks: 40Mb (in the $9,499 version) or 100Mb (in the $10,999 version). ■

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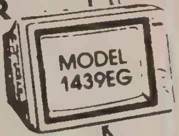

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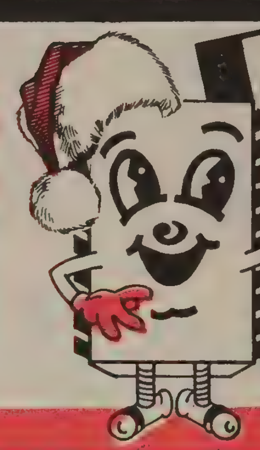

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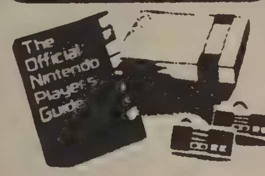

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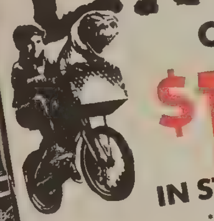

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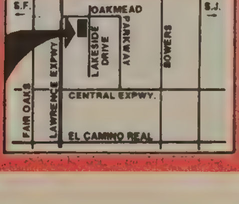
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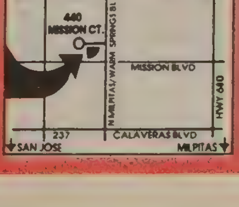
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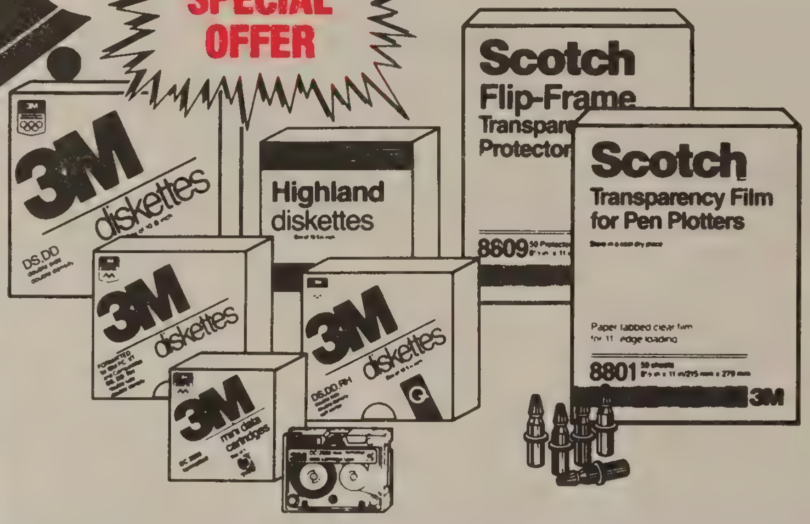

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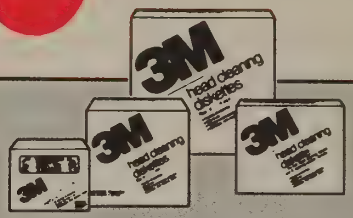

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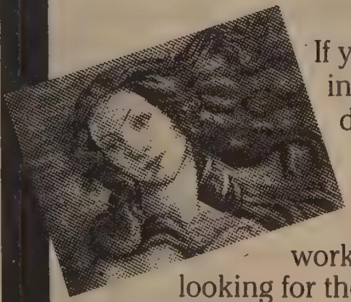

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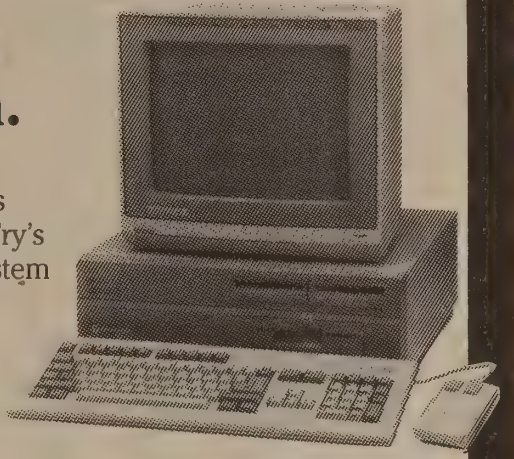

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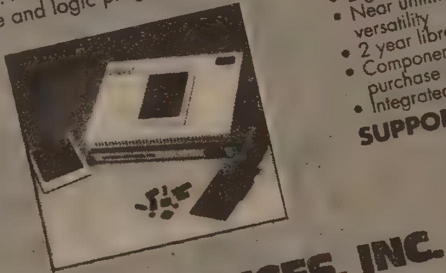

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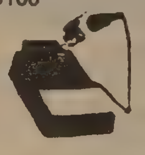

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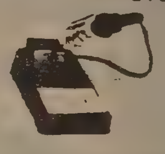

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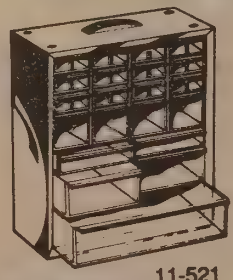

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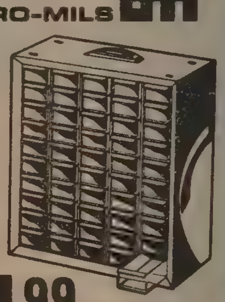

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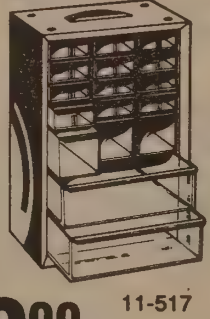

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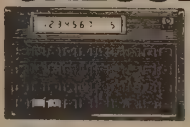

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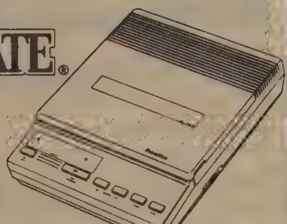

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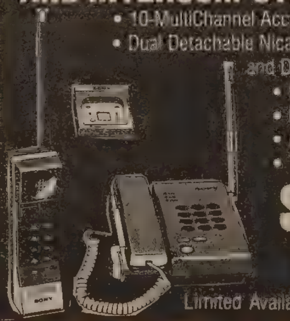

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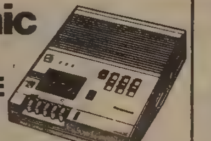

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- Built-In Speaker
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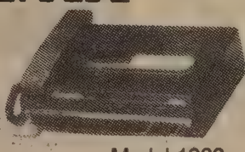

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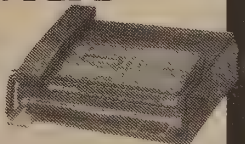

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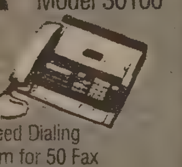

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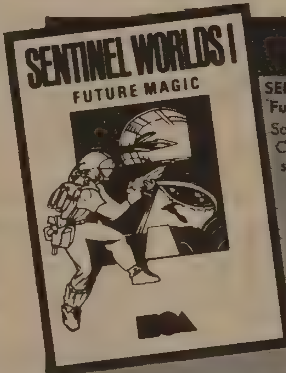

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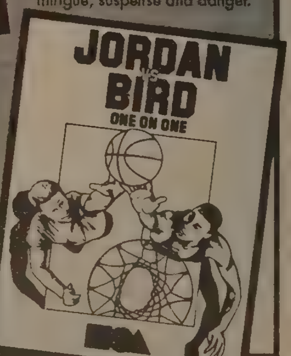

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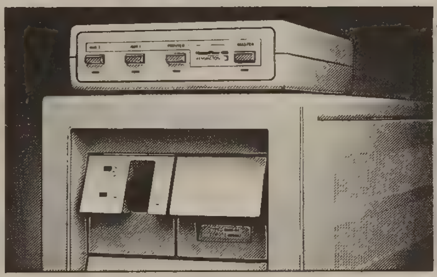
This unique surge suppressor is specially designed for personal computer users whose CPU's are not on the desktop, or are built into special workstations. Master Piece Remote organizes and protects your computer with all the features you'd expect in a top quality surge suppressor: five outlets, individual and master switching, surge suppression, noise filtering ,static protection,, and modem surge suppression.

It comes in two parts: an Outlet Strip that hides behind your desk, and a Remote Control that keeps your switches (and a handy digital clock) in easy reach.

$109⁹⁵

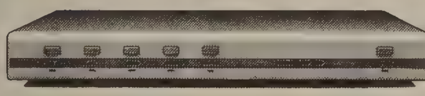
Model 6210B

Tower Power – Master Piece® 400.



This compact surge suppressor is specially designed for personal computer user's whose CPU's stand beside the desk, like the IBM PS/2 Model 60 and Model 80. Sized to fit on top of your CPU tower, Master Piece 400 replaces your computer's power cord and gives you three extra outlets with individual and master switching, surge suppression, noise filtering and static protection. And Master Piece 400;s Aux2 switch is wired independently of the Master switch for separate control of one peripheral, like a modem or external tape backup.

Model 62110 **$109⁹⁵**



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The five most popular personal computer accessories in one elegant, economical unit. Designed for any desktop computer. Master Piece organizes your entire personal computer system with five switched outlets plus convenient Master switching. Two-stage surge suppression (built to strict IEEE Category A & B specifications), EMI/RFI noise filtering, and static protection give your computer and peripherals the most effective protection available. Convenient swivel base lets you adjust your monitor to a comfortable viewing angle. UL Listed and CSA Approved.

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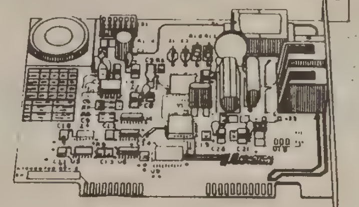

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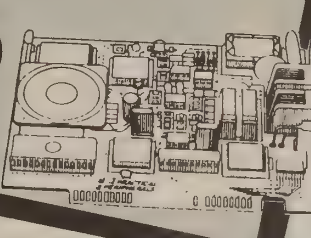

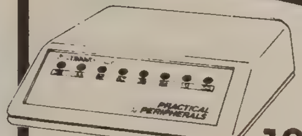

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Stand-Alone Modem
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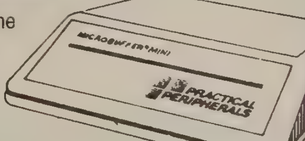

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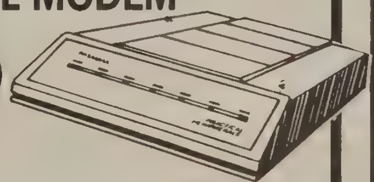

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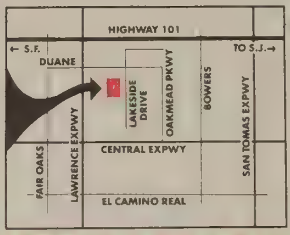

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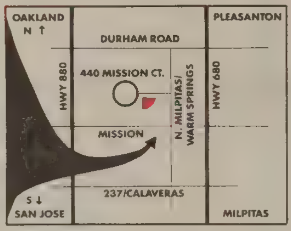

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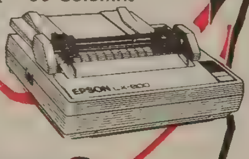

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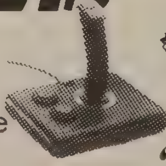

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- Replaces mice in most applications & Uses Less Space
- Middle button cursor drag with illuminated drag lock indicator
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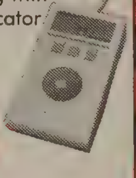

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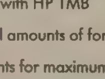
*Jet*Memory
1 MB STARTER



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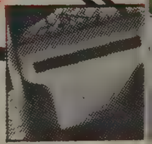

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MONO SYSTEM

- 12 MHz 80286
- 640K RAM Expandable to 2MB
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- Serial/Parallel Ports
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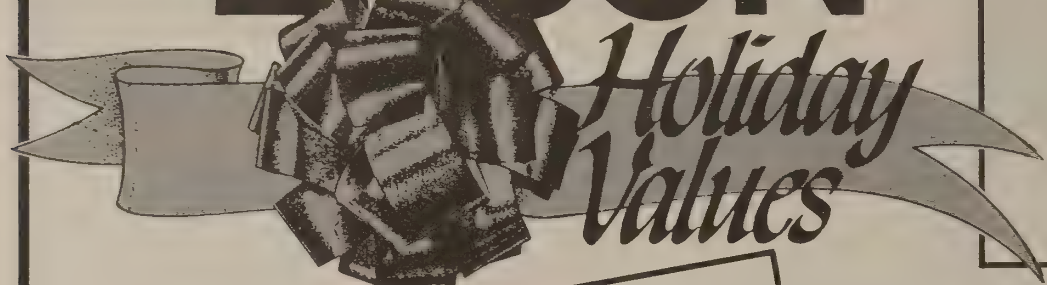

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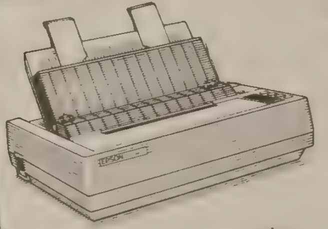

- Epson's 24-pin, dot-matrix technology creates true letter quality characters
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- The LQ-850 is backed by Epson's one year limited warranty

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9 PIN DOT MATRIX PRINTER

The DFX-5000 is a high-speed, high-volume, dot-matrix printer for micros, minis and mainframes. Designed to perform in demanding printing environments, the DFX-5000 efficiently execute printing jobs at near line printer speed. Two spearate paper paths, rear feed and front bottom feed, provide enhanced flexibility. A front control panel allows access to advanced SmartPark™ paper-handling features.

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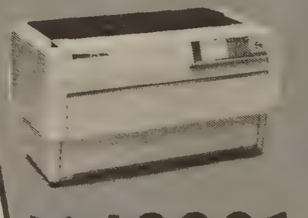

Product Features:

- Wide-carriage, 9-pin impact dot-matrix printer.
- Prints 533 CPS in SuperDraft high-speed utility mode; 480 CPS in draft mode; 80 CPS in Near Letter Quality.
- High-speed line feed takes just 17 milli-seconds, feeding 10 inches of paper every second.
- Durably built for demanding data processing environments.
- Dual push tractor system features two separate paper paths available at the touch of a button. Eliminates the manual changing of a single paper path.
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- Handles 6-part carbonless forms with ease.
- Features full software compatibility with industry standard Epson FX control codes.

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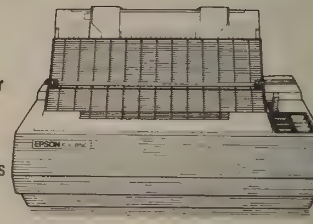

Epson's high-speed FX-850 dot-matrix computer printer is equipped with outstanding performance features.

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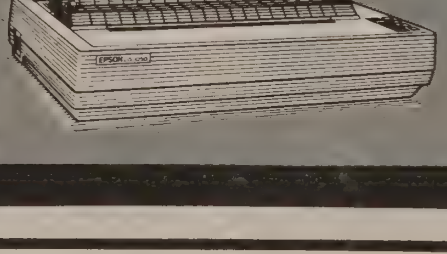
- 264 Characters per second in the high-speed draft mode delivers outstanding productivity
- 88 Characters per second in Letter Quality mode for enhanced, high-resolution characters
- In draft mode or letter quality mode, the LQ-1050 runs at a surprisingly quiet 55 dB noise level
- Exclusive SelecType front control panel offers quick, easy selection of popular typestyles, fonts and pitch
- The LQ-1050 is backed by Epson's one year limited warranty



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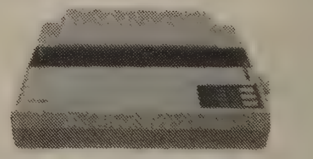

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Alien Mind achieves remarkable feats of animation and special effects on the IIGS.

GAMES

Alien Mind

By: *Robin Kar and Matthew Crysdale*
Published by: *PBI Software (1988)*
For: *Apple IIGS (512K)*
List Price: *$49.95*
Requires: *Apple IIGS; 512K RAM (1024K recommended), one 3.5" drive, joystick. Copy-protected*
Reviewed by: *Mike Markowitz*

The Apple IIGS is a real beast to program, and the market is still too small to attract major investments by top game designers. The IIGS ROM Toolbox is every bit as difficult to master as the Mac's, but the Macintosh installed base is now more than ten times as big.

Nevertheless, *Alien Mind* from PBI Software is an example of how good a game can be on the IIGS. Rather than thrash against the limits and frustrations of ProDOS 16, Programmer Robin Kar created a custom operating system almost from scratch. Graphic artist Matthew Crysdale has pulled off some remarkable animation special effects. This is no limp conversion of a title that looks better and runs faster on an Amiga or an Atari ST.

The game is a typical science fiction plot line. You're an exobiologist, summoned to a research space station to study some alien eggs. Upon arrival you find that one of the critters has hatched, taken over the station and programmed the lab animals and robot help to slay anything human on sight. The basic game display is a richly detailed, scrolling overhead view of the labyrinthine interior of the station, and after the opening screens you are dropped into an intense shoot-em-up. Over 100 different robots and monsters are individually programmed with their own murderous logic, sound effects and motions. Some are VERY hard to kill.

Weapons include needle guns, lasers and photon cannon. Other items waiting to be picked up include Key Cards (to open doors), ammo packs, first aid kits, "Conductors" (which generate a temporary power surge that weakens your foes), and energy saucers, which carry you around, floating several feet above the floor.

Alien Mind takes up two 3.5" disks. It will run on a 512K system, but one megabyte is recommended, along with the MDIdeas SuperSonic stereo card. Joystick, mouse and keyboard control options are all supported. You can move and change direction very smoothly with a bit of practice. You fire with the open-apple key, or button 0, and jump with the option key, or button 1. You can actually jump into a chair, sit down and log onto a terminal!

That is just what you must do to get very far in the game. You have to solve puzzles as well as blast maniacal robots into scrap metal. Some of these puzzles involve figuring out passwords. You must log onto the right terminals in the right order. This is a tough game to win.

You can format a disk and save or resume a game. High scores can be saved to an on-disk Hall of Fame. You can pause a game by pressing Escape, and toggle the sound effects. Everything works the way you expect it to work — which is the essence of good design.

Documentation is truly awful. The 33-page manual is rambling, incoherent and poorly written. The cover painting is very pretty. The low-tech cardboard box is a great improvement over the user-resistant, tamper-proof plastic cases of previous PBI titles. For their next game, PBI should invest in a professional writer and a quick reference card.

Alien Mind is an extraordinary feat of programming. Other game designers should buy and study it. PBI ought to consider licensing the operating system to other game companies, since Apple seems to be in no great hurry to make ProDOS 16 workable. (PBI Software, 1163 Triton Drive, Foster City, CA 94404, 415/349-8765.)

Long Lance Tactical Naval Combat in the Pacific, 1942

By: *W. Nichols and S. Newberg*
Published by: *Simulations Canada (1987)*
For: *Apple II, Commodore 64/128, IBM PC and Atari ST*
List Price: *$59.95*
Reviewed by: *Mike Markowitz*

Stretched between the Coral Sea and the South Pacific, the Solomon Islands were of interest mainly to missionaries, butterfly collectors and coconut planters until the Summer of '42. For the next six months they became the focus of a series of desperate air, land and naval battles between the Imperial Japanese Navy and US and Australian forces. So many ships were sunk in the waters around the island of Guadalcanal that the area was called Ironbottom Sound.

The Japanese Type XX "Long Lance" torpedo was one of the great technical surprises of the Second World War. Compared to the standard US torpedo, it had more than double the range, a much more powerful warhead and far greater reliability. Japanese cruisers and destroyers carried as many as 16 launch tubes, and the superbly trained crews could reload in combat. Japanese naval doctrine was based on a simple physical fact: when ships are hit by bombs and shells, it lets air in through the top, but when ships are hit by torpedoes, it lets water in through the bottom.

Long Lance is an outstanding historical simulation of six naval battles from this period. Fought at night, in a narrow area studded with islands and reefs, these sharp, deadly encounters involved battleships, cruisers and destroyers, without the complicating presence of aircraft or submarines. Unlike many wargames, which give the players an unrealistic "God's eye view" of the battle, *Long Lance* attempts to recreate the "fog of war." As the admiral in command, you have good information and control over your own flagship, but you depend on intermittent radio messages to and from your other ships. Most of the important decisions in the game are made before the first shot is fired, in a detailed planning phase, where you determine the "doctrine" and rules of engagement your ships will follow. You can accept the tactics your side used historically, or experiment with alternatives.

This is a text-based, menu-driven game. Two plastic-laminated maps and grease pencils are provided, so you can plot courses, mark enemy sightings and note the final resting places of your ships. Victory is based on a subtle, sophisticated point system that reflects the actual strategic objectives of each side.

The battles include Savo Island (9 August '42), Cape Esperance (11 October), Guadalcanal (13 November), Guadalcanal II (14 November), and Tassafaronga (30 November). The computer can play either side, and you can construct your own hypothetical battles from the available pool of ships.

We tested the IBM PC version of the game on a Compaq 386 (wow!) and an AT&T 6300. The software is well-behaved and well-designed. On a color monitor, for example, the menu background color changes to blue during the US player's turn, and red during the Japanese turn. Output can be sent to a printer, for a permanent record of the action. A game in progress can be easily saved to a DOS-formatted disk and restarted later.

The design of *Long Lance* reflects years of historical research and ample experience in the play of miniature and table-top naval wargames. We look forward to a sequel. (Simulations Canada, PO Box 452, Bridgewater, Nova Scotia, Canada B4V 2X6.)

Sub Battle Simulator

By: *Digital Illusions*
Published by: *Epyx*
For: *Macintosh II (color monitor recommended)*
List Price: *$49.95*
Reviewed by: *Mike Markowitz*

A war game written especially for the Mac II? Are you serious? Nobody except Donald Trump can possibly afford one of these things for his play room, especially with a color monitor. On the other hand, nobody can spend eight hours a day doing page layouts, CAD drawings or *Excel* spreadsheets and still expect to remain sane.

Bigger toys for bigger boys.

If you need something to demonstrate the awesome power of the Mac II to a bunch of skeptical bureaucrats, *Sub Battle Simulator* from Epyx may be just the ticket. Anyhow, that's the excuse we're using in our Lab...Finally we have enough screen resolution in glorious color for a really complex multi-window command and control environment. We have digitized sound effects and voice synthesis (even though no sub crewman who sounds like MacInTalk would ever make it past the recruitment physical...)

The simulation of the battle stations of a WWII submarine is really not very historical. You have too much accurate information and things are too

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IBM PS/2 Model 80, 16MHz	2.87	20.0	17.6
Everex Step 286/12	**2.45**	**15.9**	**13.7**
AST Premium 286-10	2.02	13.0	11.1
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Byte Magazine, August 1988

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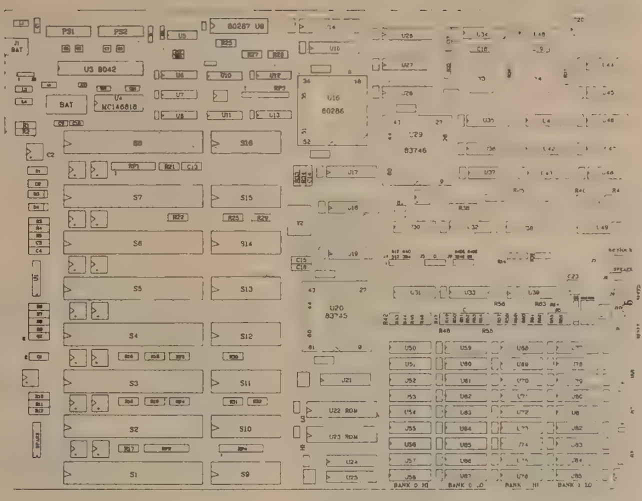

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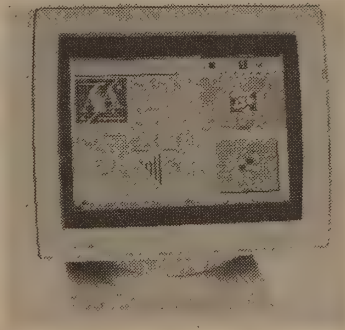

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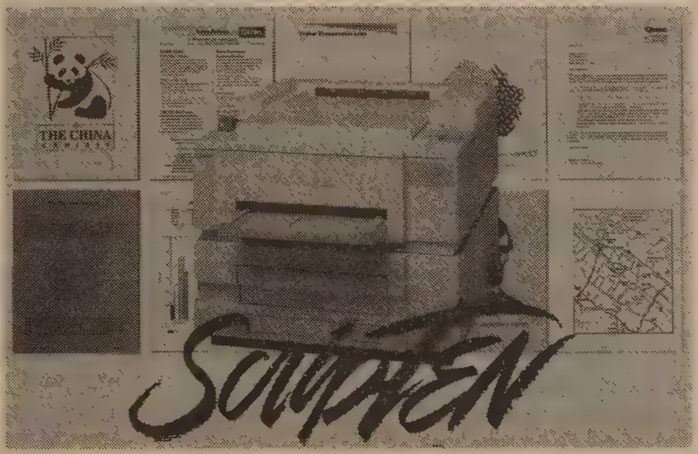

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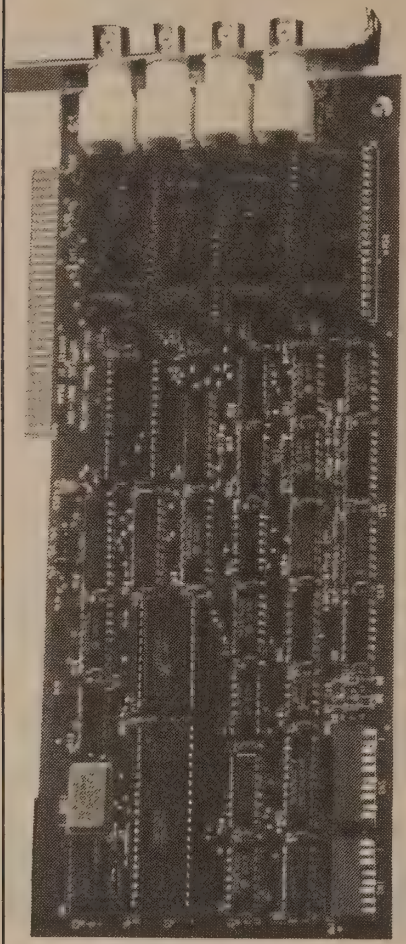

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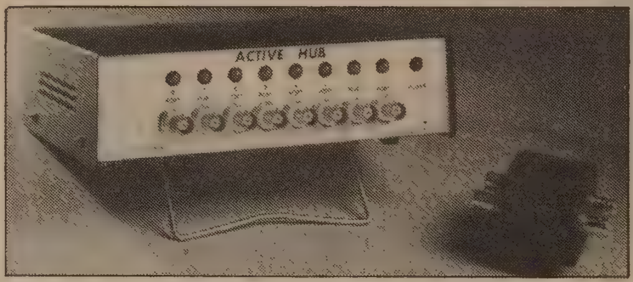

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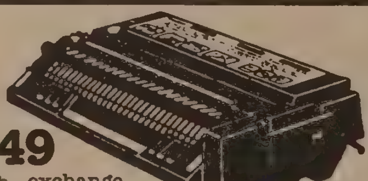

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easy to manage, but the gauges and buttons are beautifully detailed and the maps are excellent. The programmers followed Apple's Human Interface Guidelines closely (something that isn't always easy in a game), so the "feel" of the simulation is very smooth and intuitive. A rich array of options available on pull-down menus should help to keep the game from getting stale after a few playings. There's only 18K of free space left on the program disk, so you're getting a lot of code for your money.

The game does not require (or support) a joystick, so there is little emphasis on precise hand-eye coordination to aim your weapons. You simply press a button to issue the command to fire, and your well-drilled crew takes care of the rest. The game also makes the esoteric art of navigation very easy — all you have to do is set course and watch your progress across the map. There are several different time-compression scales, to speed up the action during those long intervals between encounters with the enemy.

You can command an American sub in the Pacific, or a German sub in the Atlantic. There are 60 different missions, plus a target practice mode. By selecting the Wartime Command option you can act out an entire career, until you get sunk or wind up in the Hall of Fame.

Documentation includes a 32-page illustrated manual (the same one in the original Mac version of the program), a quick reference card, and a leaflet detailing the specific Mac II differences.

The first copy of the program we received bombed out during startup under our bug-ridden System 6.0. By the time Epyx rushed us a new copy, we had installed the latest System 6.0.2 and the program started up and ran flawlessly. Historians and old submariners may be disappointed by the liberties the designers took with this game, but hard core gamers will be delighted with the sound, the graphics and the design. (Epyx, 600 Galveston Drive, Redwood City, CA 94063, 415/366-0606.)

Pirates!

Designed by: *Sid Meier*
Published by: *MicroProse Software (1988)*
For: *Apple IIGS (256K) joystick or mouse optional*
List Price: *$39.95*
Reviewed by: *Mike Markowitz*

Our popular culture romanticizes the pirates of the 17th and 18th centuries. In a period of stifling convention and hypocrisy, they symbolized a wild, heroic sort of individualism. Governments usually regarded the pirate as an enemy of the human race. To hunt down and exterminate piracy, according to international law, is the duty of every civilized state.

For over a century, ending around 1700, however, piracy was an important instrument of power politics in the Carribean. The Spanish Empire depended on a steady stream of gold and silver from the mines of Mexico and Peru. With luck, daring, and the blessing of Spain's many enemies, a few men with a fast ship could hope to hijack a treasure galleon and retire to a life of leisure.

PIRATES! is a role-playing action-adventure by Sid Meier, one of the few computer game designers with a serious grasp of history. While not exactly

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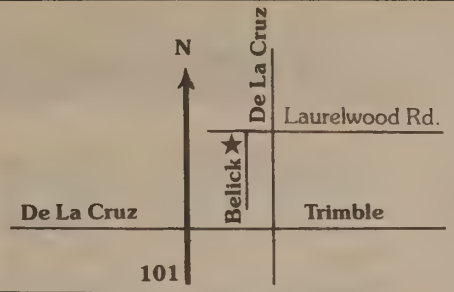

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- And Common Features

Price $1959

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(NORTON SI = 24.2; Landmark = 29.5)

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- And Common Features

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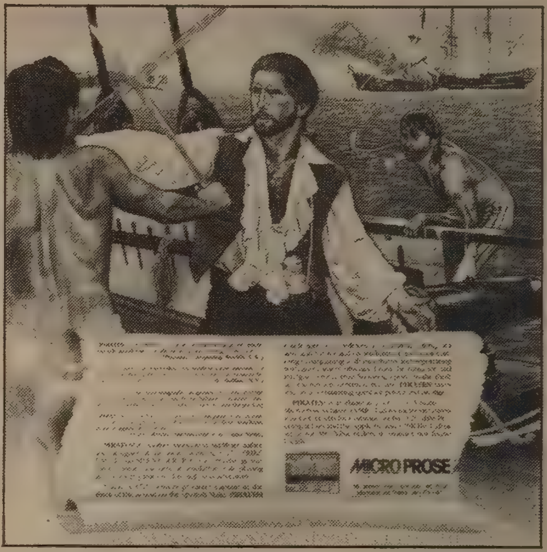
(One Year Limited Warranty On Parts and Labor) the Disney version, this game is a sanitized simulation of shipboard life in the age of sail (which was described by one historian as "rum, sodomy and the lash").

You start as an apprentice captain, with a small ship and a loyal crew. You can select a nationality, a special ability (like swordplay, navigation or medicine) and a particular time period. You move between several different environments: navigating, fighting and boarding other ships, expeditions ashore, and carousing in taverns. If you acquire sufficient wealth and status, you might even marry a Governor's daughter. The game presents a vast amount of information, but the logical, menu-driven interface makes it easy to manage.

The game systems strives mightily to keep you alive, at least at the Apprentice level. Even when you make dumb mistakes, a dialog box usually pops up to describe some delightfully improbable rescue. When you wreck a ship on a reef, for example, hospitable Indians may keep you alive until old shipmates come to your rescue. The game measures time in months, and as you get older, your health may start to fail. The object of the game is to amass as much wealth as possible, by trade, plunder, discovery of buried treasure and the sale of captured ships.



Pirates! is a role-playing game which lets you pursue a career of plunder and adventure in the West Indies.

The package includes an 80-page illustrated manual, a quick-reference folder, and a detailed historical map of the West Indies. Documentation is excellent, with detailed descriptions of ship types, notes on tactics, a geographical index and extensive historical background. Only a bibliography is lacking.

The arcade-action features of *PIRATES!* will appeal to younger players, while the quality of the historical and geographic research will delight veteran wargamers. Sound and color graphics on the IIGS version are used effectively. A game in progress must be saved to a specially formatted disk, so you need to have a blank disk on hand before starting.

To discourage modern-day pirates, *PIRATES!* is copy-protected. A startup screen will also quiz you about information in the manual, so keep it handy, or you won't get very far. (MicroProse Software, 180 Lakefront Drive, Hunt Valley, MD 21030, 301/771-1151).

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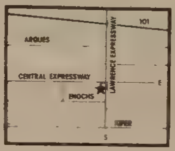

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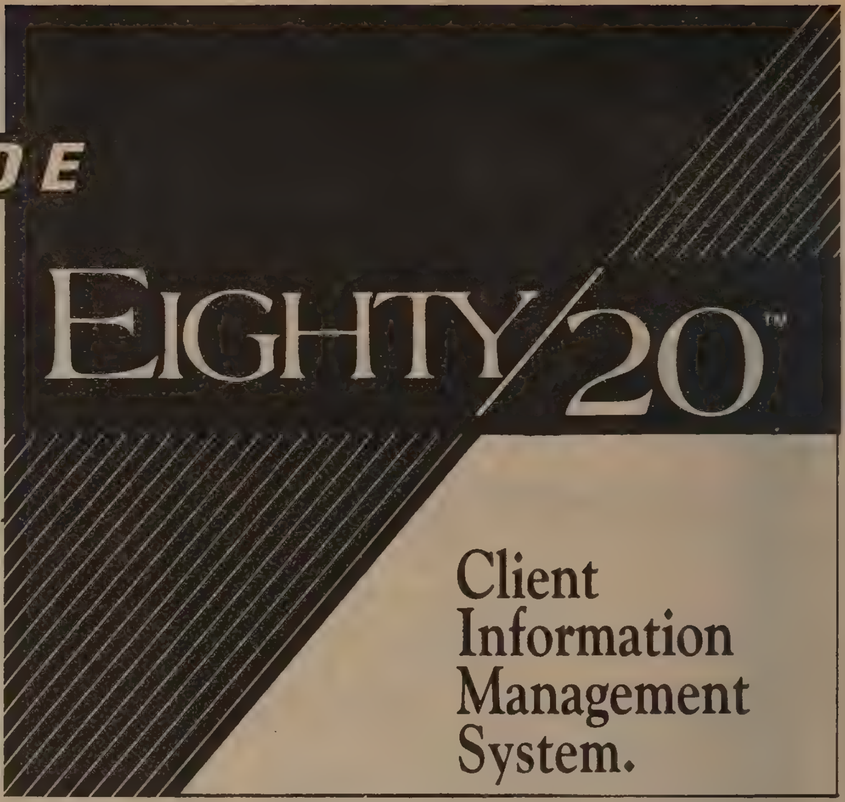

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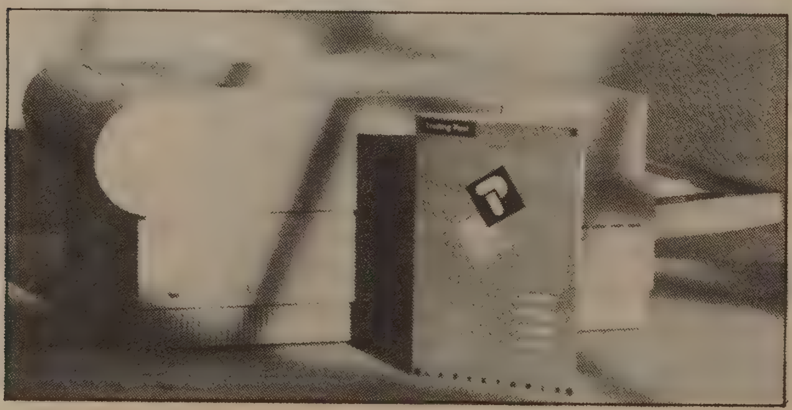

Rather than have two printers, one for PostScript and one for non-PostScript applications, you can now install *Trading Post*, a PC utility that generates PostScript output. Incorporating a concept called "printer personality management," *Trading Post* allows one PostScript printer to be used as if it were two printers on two separate printer ports. PostScript applications print through one port, non-PostScript through the other. *Trading Post* gives the user complete control over fonts, orientation, margins, line-per-page, trays, paper size and number of pages. *Trading Post* is compatible with printer sharing devices and all popular networks. ($79.) LaserTools Corporation, 3025 Buena Vista Way, Berkeley, CA 94708. (415) 843-2234.

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PC BUYERS GUIDE

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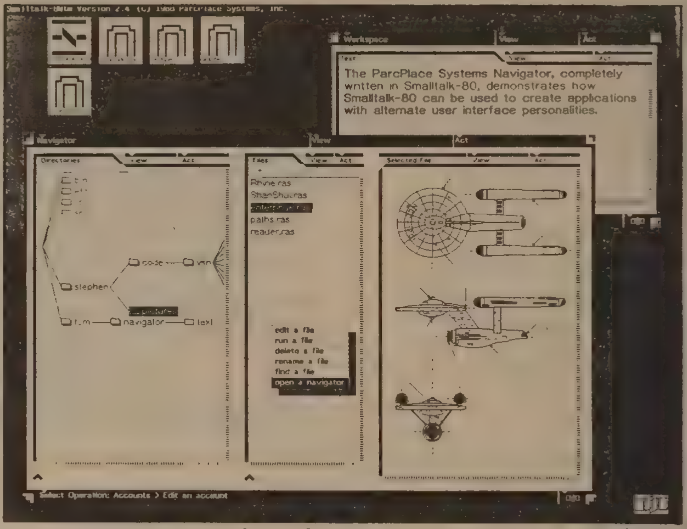
The ParcPlace Systems Navigator, completely written in Smalltalk-80, demonstrates how Smalltalk-80 can be used to create applications with alternate user interface personalities.

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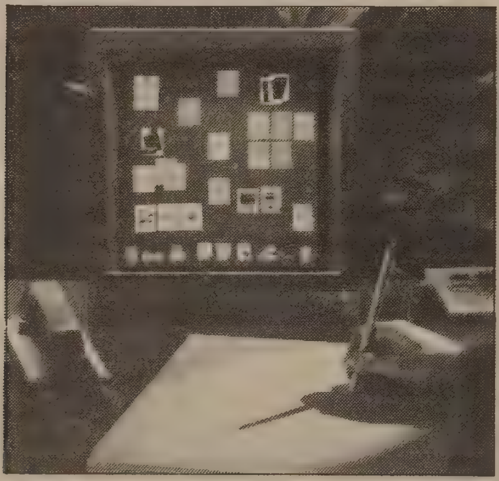

Featuring an electronic pencil and tablet and a telephone-like handset, the Wang Freestyle personal computing system allows PCs to accept handwritten notes and voice messages, combine them with electronic pages of data displayed on the PCs, and send the entire packet to other similarly equipped systems in a business network. All that is required to choose a Freestyle function is touching the pencil to the tablet or picking up the handset. This prompts the monitoring portion of Freestyle software to interrupt the existing application and allow the Freestyle environment to take control of the PC. Freestyle then turns any information on the screen into a screen-size electronic piece of paper by capturing the graphic or text information in the PC's display memory. Freestyle also allows users to create a replica of their desk on the PC screen, with stamp-sized versions of the Freestyle pages that can be moved, stapled, unstapled, filed, mailed or enlarged for review and further comment. ($2000) Wang Laboratories, Inc., One Industrial Avenue, Lowell, MA 01851. (508) 459-5000.

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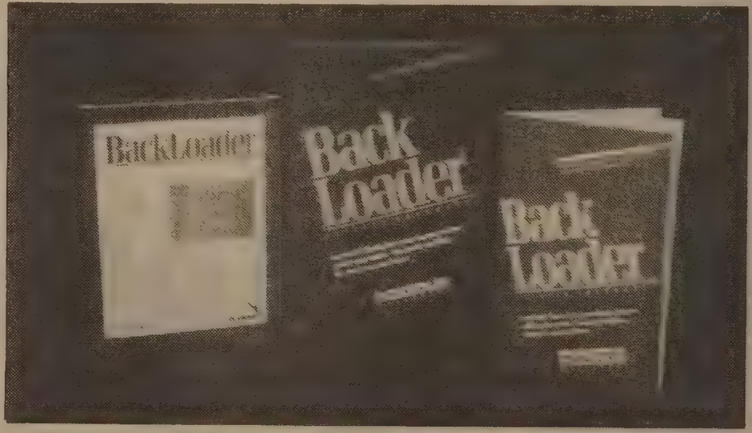
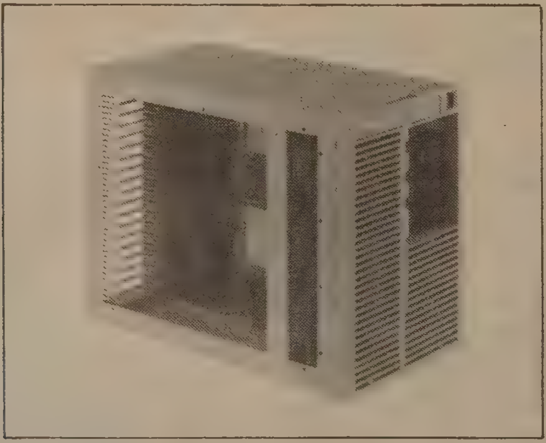


Designed to work with the Hewlett Packard LaserJet family of laser printers or compatibles, *BackLoader* is a PC utility that saves the user time by downloading soft fonts into laser printers in the background. By pressing a hot key, *BackLoader*'s pop up screen instantly shows users what fonts are already loaded in the printer at any given time. Users can download another set of fonts by using file names including wildcards. *BackLoader* runs on any PC or compatible using DOS 2.0 or higher. ($29.95.) Roxxolid Corp., 3345 Vincent Rd., Pleasant Hill, CA 94523-4318. (415) 256-0105.



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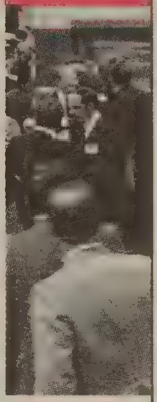

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MAC @ WORK

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Making The Springboard Jump

Springboard Publisher Brings Low-Cost DTP To The Masses

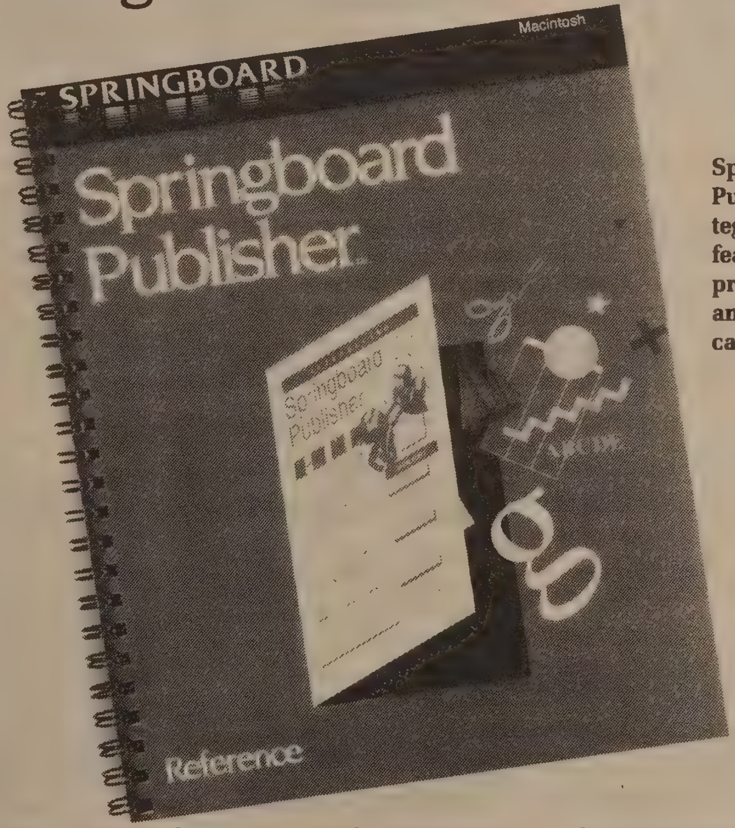
By Tony Rocco

Desktop publishing is coming to the masses in simpler, inexpensive programs that give the less-than-professional desktop designer ample means of producing business reports, newsletters, brochures and flyers. Costing much less than the likes of *PageMaker* 3.0 and *Quark XPress* 2.0, such programs offer a surprising range of features in an easy-to-use, affordable package.

One such application is *Springboard Publisher* from Springboard Software, Inc. Billed as a combination word processor, desktop publishing and graphics application, *Springboard* promises to do quite a lot for under $200. While it delivers on most of its claims, I found the program's chief strong point to be its layout capabilities, not its word processing or graphics features. In fact, while you could conceivably use *Springboard Publisher* as a stand-alone word processor, you would soon become fed up with its many limitations.

As a word processing program, *Springboard Publisher* makes *MacWrite* look advanced. It has no style sheets, no spell checker, no keep lines together, no soft return and no keyboard commands for many functions (a problem with the application in general).

Lest I sound unduly harsh, it really doesn't bother me that *Springboard* is not a full-blown word processor. As long as you don't buy *Springboard* thinking that it will satisfy your word processing needs, you won't be upset by its somewhat exaggerated claim to be a word processing application. Its page layout capabilities alone are worth the price.



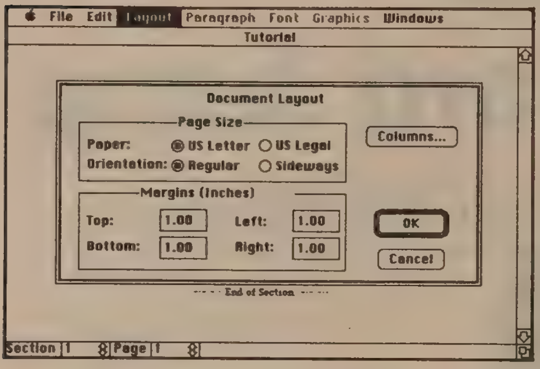
Springboard Publisher is an integrated package featuring word processing, DTP and graphics capabilities.

A Couple Of Surprises

Springboard Publisher is not the high priced spread. It isn't meant to compete against *PageMaker*. Imagine my surprise, then, when I discovered a feature commonly associated with more sophisticated page layout programs. Text wrap-around. Yes, you can flow text around graphics in *Springboard Publisher*. You can even move a graphic around from one place to another in the text and have the text automatically flow around it. It took Aldus three tries to come up with a version of *PageMaker* that had text wrap-around. The wrap-around feature isn't quite as slick as it is in *PageMaker*, mind you, not allowing you the same precision. Nor does it give you any options about *how* the text wraps around. By this I mean you don't have the options of making text stop when it gets to a graphic and resume on the other side of it, or stop when it gets to a graphic and resume in the next column. But it is useful nonetheless.

Another thoroughly likeable feature of *Springboard Publisher* is automatic text flow. When you import text from one of the three file formats *Springboard* accepts, *MacWrite*, *Word* or ASCII, the application automatically creates the number of pages necessary to accommodate the text. It then fills those pages. Note: *Springboard* cannot import documents it has created. This means that to bring in text created in *Springboard* you must open the document and cut and paste. No big deal, but it would be easier to simply import the text without opening the document.

Should you be interested in using *Springboard* to create a manual or other book-like publication, you will likely find the application well suited to the task. *Springboard* allows you to segment a document into discrete sections so that you can work with one chapter at a time. And you can create a document with as many pages as you have disk space for.



Page Size

Paper: ● US Letter ○ US Legal

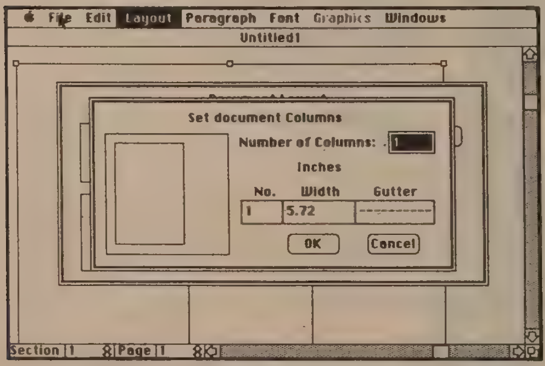
Orientation: ● Regular ○ Sideways

Margins (Inches)

Top: 1.00 Left: 1.00

Bottom: 1.00 Right: 1.00

Setting up page dimensions, orientation and up to nine columns per page is easy.



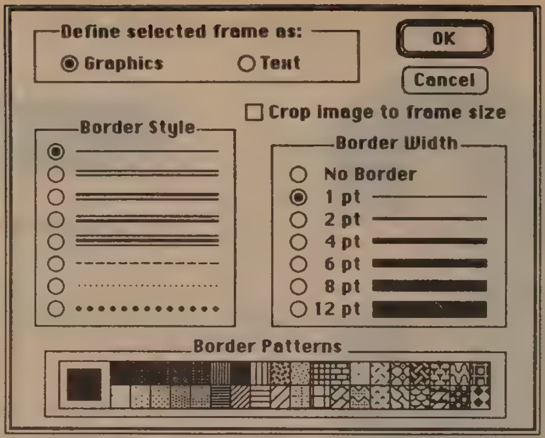
Number of Columns: 1

Inches

No.	Width	Gutter
1	5.72	----------

Using Springboard

If you've used other desktop publishing applications, you know they all have different ways of doing things. In *Springboard Publisher* you'll need to accustom yourself to creating and working within boxes which hold either graphics or text. It's an easy concept to get used to and fairly intuitive. You begin, as you would in any program, by setting the page size (either 8 1/2" by 11" or 8 1/2" by 14"), orientation, margins, columns (up to nine) and distances between columns. Dialog boxes make this an easy task. Background text boxes are created automatically.



Define selected frame as: ● Graphics ○ Text

☐ Crop image to frame size

Border Width: ○ No Border ● 1 pt ○ 2 pt ○ 4 pt ○ 6 pt ○ 8 pt ○ 12 pt

When you create a frame you must first define it and choose border options.

Text and graphics boxes can be precisely located on the page with rulers set in either inches, centimeters, picas or pixels/points. You may also activate a Grid command to assure precise alignment. The grid can be set at intervals from .014" to 4.25". *Springboard* also displays X,Y coordinates in pixels/picas for very exact sizing and placement.

To make a box active, you either click or double-click on it. Double clicking on a text frame makes it possible to directly enter text. Clicking once makes it possible to flow text in from a word processing document. Double clicking on a graphics frame brings up a *MacPaint*-like set of tools for creating or editing graphics. Clicking once allows you to enter clip art or a prepared graphic. *MacPaint*, *FullPaint* and PICT are supported.

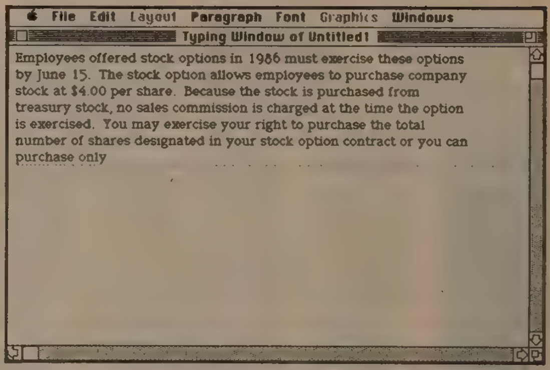
I found it delightful to be able to link text boxes. Let's say you're creating a newsletter with sidebars in it. The main body of text would be held in the backgound text frames (which don't require special linking), with sidebar text in smaller boxes scattered throughout the document. By utilizing *Springboard's* linking feature, you simply import text into the first one and have it flow to the other boxes linked to it. Pretty neat, assuming the text in all the sidebars is related.

It is also an easy matter to add or delete pages and to extend existing column and box setups to newly added pages. Basically there is only one page view that is suitable for working in: full page. Unfortunately, in full-page view you cannot have two facing pages to work on at once. It would be quicker and easier to be able to scroll across two pages rather than having to clear the screen of one page to bring up another. *Springboard* allows you to view two pages at once in thumbnail size, and even create boxes in this mode, but it is not usually practical.

Almost Outstanding, But...

Springboard Publisher comes close to being an outstanding DTP application for producing simpler documents like informal brochures and newsletters, flyers, business reports and menus. It has a couple of shortcomings, however, that detract from its ease of use and functionality.

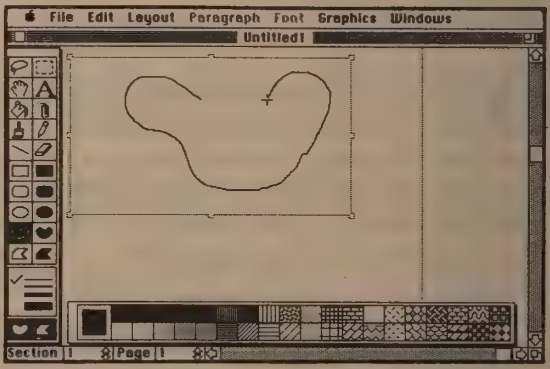
Speed has never been a strong point of page layout programs, but *Springboard* is slower than most. You may find your patience tried quite considerably when doing most anything in *Springboard Publisher* (unless you're on a Mac II). I would like to see the application speeded up somewhat.



Employees offered stock options in 1986 must exercise these options by June 15. The stock option allows employees to purchase company stock at $4.00 per share. Because the stock is purchased from treasury stock, no sales commission is charged at the time the option is exercised. You may exercise your right to purchase the total number of shares designated in your stock option contract or you can purchase only

A Typing Window allows quick text entry.

Springboard Publisher comes close to being an outstanding DTP application for producing simpler documents like informal brochures and newsletters, flyers, business reports and menus. It has a couple of shortcomings, however, that detract from its ease of use and functionality.



Graphics capabilities consist of MacPaint-like drawing tools.

The program's second failing is the rather awkward way in which text fills are implemented. My first impression was that text fills (tints or shading placed behind text as a background to help differentiate one body of text from another) were not possible in *Springboard*. They are not explicitly discussed in the tutorial or reference. In fact, a call to tech support seemed to confirm that text fills were not possible. After corresponding with Matthew McClure from the development team, I was informed of a way to use the application's text wraparound feature to produce background fills. It's a little more complex than just creating a text box over a graphics frame, but it works.

My overall impression of *Springboard Publisher* is that it makes a nice low-level DTP application for use by non-professionals. It is easy to use, comes with an excellent tutorial and reference and has a few surprising features—along with a couple of surprising failings. If its authors can address these failings, *Springboard Publisher* would be an amazing value for under $200. (Springboard Software, Inc., 7808 Creekridge Circle, Minneapolis, MN 55435. (612) 944-3912. ■

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MAC-PC CONNECTIVITY

BY ROBERT BEAUCHAMP

Visions Of The Future

Connectivity Creates A Standard

In the early days of Mac to PC connectivity it seemed a struggle just to get a *MacWrite* file on a Macintosh transferred and translated into a *WordStar* file on an IBM compatible PC. Now, however, we can transfer complex graphics, desktop publishing and PostScript files. For the most part we can even do it inexpensively.

There were two major obstacles to Mac-PC connectivity. One was the incompatibility of the Macintosh's graphic interface with the PC's traditional character based interface. The other was the lack of corporate acceptance of the Mac in a world dominated by IBM and its legion of imitators.

I recently attended a Businessland Executive Symposium titled Connectivity: The Key to Increased Productivity. At this symposium, Apple, IBM, Microsoft, Novell, 3Com, DCA and DB/Access got together to demonstrate a vision of the future.

If there was one central goal put forth by all these companies to the assembled executives and journalists, it was this: In order to increase productivity, users must have access to any information they need from any environment, at any time. The way to make this possible, they all agreed, was connectivity.

The most heartening aspect of all this is that in order to achieve this goal these competing companies have realized that cooperation and standardization are required.

If you are involved in connectivity, you probably see yourself as some kind of peacemaker. Bringing together disparate groups to solve a common need and serve a greater good where everyone benefits from your actions.

This is exactly the role companies like Novell, 3Com, DB/Access and DCA have been playing in order to bring together your mainframes, minicomputers and microcomputers of all makes and sizes to serve the greater need of faster access to information, no matter where it is stored.

While the subject of this column is Macintosh-to-PC connectivity and not PC-to-Mainframe-to-Mini-to-Workstation et. al., the two main issues that are going to make this vision of the future possible are very familiar to the readers of this column. They are the acceptance of the graphic interface and the embracing of the Macintosh by corporate America.

What these companies are offering is a world where you will be able to have your PC, which is connected to a local area network, which is connected to a wide area network which is connected to a minicomputer like a VAX, which is connected to an IBM mainframe, which might be connected to a Tandem mainframe or even, dare we say it, a Cray.

On this ever more complex information system are workstations, file servers, gateways, modems and on and on. Through these you will be able to access any information stored anywhere on the system, and—here comes the kicker—you'll be able to do it *transparently*.

Accessing information transparently means that you don't know, or don't really care, *where* the information is stored. You simply call it up and use it. You won't need to know how to log on to the mainframe, or even that you have logged on to a mainframe, all you see on your screen is a filename. You won't know what path that information took to get to you either. All you know is that you can access it with lightning speed.

How does one then achieve this transparency to the user? How does one take the incredibly vast range of applications available to the user and simplify them to the point of transparency? How does one prevent the user from having to know the difference between a Mac and a VAX?

The answer, of course, is the acceptance of a standard graphic interface. And why an acceptance of a standard *graphic* interface and not some other interface? Because of the acceptance of the Macintosh by corporate America.

The reason for a common graphic interface are simple and pretty well known. Once you learn one application you've pretty much got a handle on all of them. People who use applications with a graphic interface actually use more applications than those without access to a graphic interface. Corporate America loves increased productivity, and happy Mac users are very productive.

What the big guns at this symposium are saying, therefore, is that the graphic interface we are used to on the Mac—windows, icons, point-and-click—is *the* standard if you want to play the connectivity game. The people who write software are going to have to conform to this standard, whether it is in front of the Macintosh operating system, OS/2 or UNIX.

The now-infamous Apple-Microsoft lawsuit begins to make more sense in this light.

One might argue that it is stupid for Apple to sue Microsoft. Apple should be happy to have companies use the interface because it promotes the use of the interface. A lawsuit simply scares developers away from the interface, possibly forcing the creation of a new standard.

However, if the companies at the symposium are to be believed, the standard has *already been chosen*. And not just for OS/2 and a few applications. It has been chosen for everything you're going to see on your computer screen, for a long time to come.

The way I see it, it's not that Apple doesn't want its graphic interface used universally, it's just that they want everyone to know where it came from and who you're going to have to pay to use it.

This, then, is the vision of the future from those who should know. A standard interface across the board, from mainframe to mini to PC. Applications will have standard back ends providing file compatibility. They'll have front ends to fit the needs of the varying environments and operating systems. It will all be connected by everything from telephone wire to fiber optics.

All this will be transparent to the user, however. All the user sees are the same old windows and icons. This month's lesson: get to know your mouse.

The Word On The New Word

During the demonstrations at the Businessland symposium, Microsoft was showing a demo of its new version of *Word* for the PC.

As you may be aware, the present Microsoft *Word* does not take advantage of Microsoft *Windows* ' Presentation Manager graphic interface. The new version of *Word* will be compatible with OS/2, but it still will not take advantage of OS/2's graphic interface.

What the new version does have, however, is a preview function that shows you a WYSIWYG picture of your document, including fonts and imported graphics.

It is remarkably similar, in fact, to the preview feature you get with *WordPerfect* 5.0 , which was, up until now, the PC world's only major word processor that could import graphics files.

The major difference between *Word* and *WordPerfect* 5.0, from a connectivity standpoint, is that *Word* files on the PC and *Word* files on the Mac will be completely compatible. This is not true for *WordPerfect* 5.0 and *WordPerfect* for the Macintosh files.

When will we see a full blown *Word* on the PC that takes advantage of Microsoft's own Presentation Manager? The Microsoft representative said that one was inevitable, but she would not say when inevitable might be. ■

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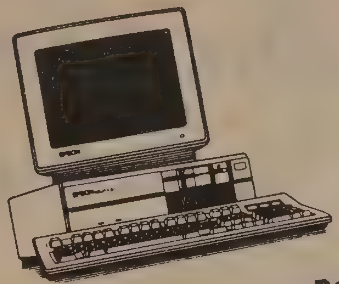

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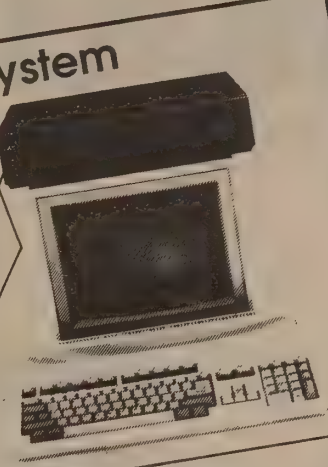

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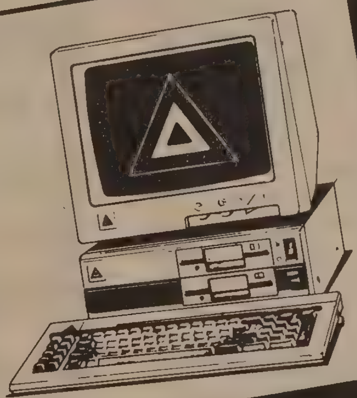

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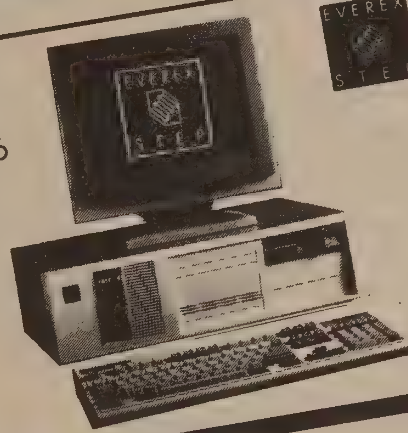

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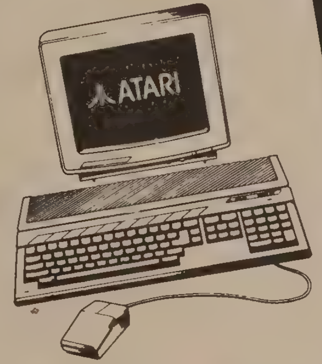

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BMUG

BY DAVID MORGENSTERN

MacTurkeyFest, Steve Jobs Comes To BMUG And The Year In Review

Welcome to the BMUG column. This month we've got BMUG memories from the past year and some tips and information to take into the new.

Wholly BMUG

What's better than Monday Night Football? The weekly BMUG main meeting! Luckily Mac gridiron fans never have to make the choice, since the meeting is on Thursday. We have visiting software marketing teams dropping the ball. It's a double-tasking game, where everyone is a referee and a player simultaneously. The ever-faithful crowd at the meeting will tell you that BMUG never *Scores!*

TurkeyFest—No Turkey!

The BMUG TurkeyFest (a.k.a. MacToberFest) was a great success. Thousands of visitors flooded into the spacious hall above the Berkeley Student Union. The main ballroom held dozens of Macintoshes (provided by the manufacturer), while seminars on file recovery, desktop publishing and other good stuff convened in a conference room.

This festival is a chance for members to show everyone what they're doing with their software. Everyone was impressed and proud of the endless variety of software the BMUGers use—everything from scientific programs, illustrations and databases, to the latest games, *HyperCard* and MIDI music software.

The Fest is also a great time to get some answers to those questions that have been on the back-burner simmering. At the TurkeyFest you could not only get your question answered, but talk to the programmers writing your software. If they don't have a current solution to your problem, you'll see it in the next release.

The NeXT Congregation?

After the meeting came the weekly BMUG main meeting featuring our surprise mystery guest, Steve Jobs. A line stretched for a block downhill from the lecture hall's double doors. Hundreds of people waited in the cold night air for the first public demonstration of the NeXT computer!

It was fantastic to see both the new NeXT computer in action and Saint Steve of the Forbidden Fruit and Black Cube in the flesh. The crowd was on pretty good behavior for one of the exalted Macintosh Saints. Jobs said, "If you have any questions, I'm sure you'll jump right in." We did.

He was enthusiastic about his new baby. But whenever Jobs had to say the A—le, or the Mac——sh words, his eyes got hard and his jaw tightened. Liz of the BMUG business office thought it was the same feeling you'd get if you'd hear that your ex-spouse had done something great—a combination of pride and anger. He didn't want to talk one bit about the Macintosh, other than to say it's a has-been now that the NeXT is off the drawing board.

Get A Jobs

Jobs gave the Davies Symphony Hall Coming-Out spiel for BMUG, including the NeXT board manufacturing video and computer history slide show. He was surprised by a sudden roar of boos over a slide of Stanford—one week before the Big Game.

Unlike the look-but-don't-touch press party, BMUG members got to play with the new toy. Our hardware crew surrounded the NeXT laser-printer and popped-off the top!

TIP:

Ken Peterson, the Portland MUG's techie, tested a bunch of labels for use in LaserWriters. The Plain-Bond Copier Address Labels by Instant-Stik (#M-5354) worked the best. On each sheet there are 33 labels measuring 1" by 2 3/4". Hand-feed them to a LaserWriter and use the fold-out collection tray on a LaserWriter II.

> **The NeXT machine, with built-in digital audio, microphone and software, makes it easy to send large sampled voice-mail messages to your co-workers and NeXT buddies around the world. Shall we start a betting pool to guess how many NeXT machines it will take to overload the international UNIX-based networks? "All together now—Happy birthday to"—Click.**

It's easy to see why military purchasing is so wild—it's easy to believe the hype. After a slick presentation and a video or two, you believe you're seeing history, not a projection into the future. It is a marketing plan, a βeta machine, still cooking in the oven. There is no real hardware or software for us—yet. To even be in the running to buy one this year, your name has to end with University.

The NeXT machine, with built-in digital audio, microphone and software, makes it easy to send

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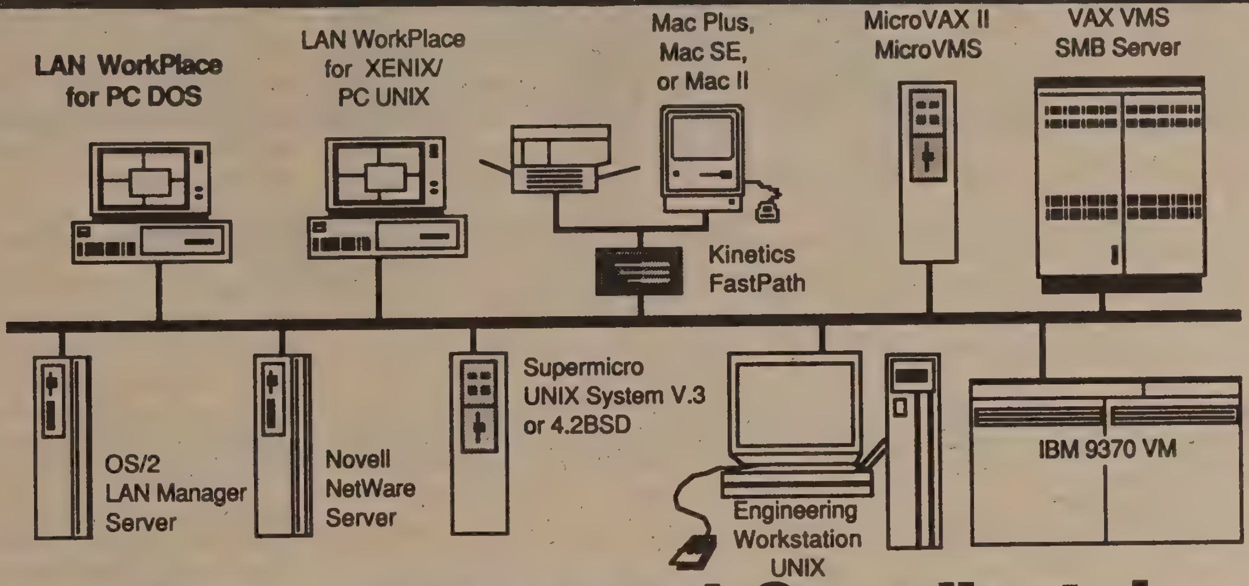
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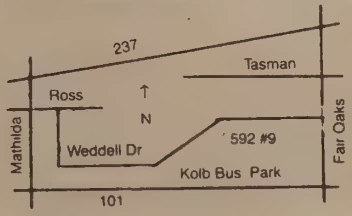
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large sampled voice-mail messages to your co-workers and NeXT buddies around the world. Shall we start a betting pool to guess how many NeXT machines it will take to overload the international UNIX-based networks? "All together now—Happy birthday to"—Click.

If the system isn't brought down by trying to swallow all these voice-mail hairballs, it may suffer a headcold. The *SendMail* program was the introduction site for the early November UNIX virus attack. Jobs said that NeXT was affected by the virus.

The demonstration included the *Application Builder* software, an object-oriented programming environment. It is a very impressive and powerful set of tools for quickly creating programs. There can be no doubt that just as *HyperCard* is for the Macintosh, *Application Builder* will be a great source of bad programs for the NeXT computer.

Intellectual Property Protection (With Class)

Sometimes programs have a shorter half-life than the atom-smashed elements floating downhill from the Berkeley laboratories. Ask Rick Scherle, a local independent consultant on product design, and *HyperCard* developer.

After the NeXT announcement in October, Rick wrote a program called *Browser*. It made the Macintosh DeskTop look just like the NeXT interface. It was not a Finder substitute, like *Minifinder* or *PowerStation*, with the ability to launch programs; however, it could open and close folders. Everyone at BMUG thought it was a trip and it was put on the Bulletin Board.

Soon thereafter, one morning, Rick got a call saying, "Hi Rick, this is Steve Jobs." Steve wanted to talk about *Browser* and made an offer that couldn't be refused—a tour of the NeXT offices. He went down to NeXT and had an "extremely cordial" meeting with the Living Saint. They discussed the NeXT interface design and put the machine through its paces. But they weren't happy about *Browser*.

NeXT was primarily concerned about infringements of its intellectual property. They also didn't want anyone to confuse the origins of the program, since its icon was the NeXT cube. Bye-bye *Browser*.

The Year That Woz

What a year this has been for BMUG and the computer world. To celebrate the new year we've put together a list of kudos and menudos:

• **Best Support of Color.** *Wingz* by Informix. This spreadsheet has been in ßetaville (beta is software development talk for an almost finished program that is being tested) for more than a year. They have had large and impressive booths at the past few Macworld Expos. The best thing about the booths are the colored bags they hand out to people that survive their marketing pitch. First it was a red bag, then black, then red again and now yellow! Isn't venture capital wonderful?

• **Best Pantomime Virus.** *DeskTop Manager*. When is a virus not a virus? When it's Apple System Software! The Macintosh operating system has problems with large numbers of different applications or files on a single volume—like the new Apple CD-ROM drive, or an 80 megabyte or larger hard-disk drive.

The trouble is with the Desktop file, an invisible file that hides on your disks. It remembers every icon it's ever seen, type and ID numbers of applications, and the folder IDs of applications. All this information requires a number of bytes for each item remembered. On the big drives this can add up quickly.

Unfortunately, the Desktop file currently has limits to the amount of stuff it can keep track of—usually around 288K. The closer you get to the 288K desktop file limit, the more trouble your Mac will have in keeping track of what's what on the disk. If you hit 288K—Crash!

Apple is testing an AppleShare Init called the *DeskTop Manager*, which splits the desktop file into pieces. One new problem with this software is that it places invisible files on every volume it can find—even if you aren't using the *DeskTop Manager* on your system. Just like a virus—No?

• **Best Computer Bath-Toy.** Richard Brandow and the balsa wood Laguna laptop. Richard Brandow is the publisher of the Canadian Macintosh magazine, *MacMag*. He is better known as the creator of the Universal Message of Peace virus. This was the harmless virus spread around the world by Marc Canter's MacroMind demo for the graphic program, *FreeHand*.

Last June at a Mac Montreal User's Group meeting, Brandow presented a "prototype" of the Apple Laptop, code-named Laguna. It turned out to be a balsa wood mock-up with an acetate transparency of the Finder glued to the screen. The press had been prepared for a blockbuster event, but instead were treated to a blockhead.

They knew how to get to the truth in the Middle Ages. Throw the computer into a pond. If the machine sinks, it's a real laptop. If it floats, it's a witch.

• **BMUG Meeting Quote of the Year.** While demonstrating the features of *HyperCard* 1.2, Bill Atkinson (the creator of *HyperCard*) said, "It's easy to get a 200 to 1 speedup in a program when you stop doing something stupid." Give us a break, Mr. Macintosh genius programmer!

I'm™ Sorry™ !™

Last episode, I mentioned that the NeXT™ computer uses a floptical disk drive. I have now been informed that the word Floptical™ is owned by drives made by Insite Peripherals (the NeXT drive is made by Toshiba). The drive uses an optical servo-mechanism, but reads and writes data magnetically. It uses high density 3.5" floppies with special optical tracks that allow 20.8 megs of formatted storage. The OEM price on the drive will be $250. Insite Peripherals, 2363 Calle Del Mundo, Santa Clara, CA 95054.

Hum A Version and I'll Fake It

The computer is both the delight and the bane of the perfectionist. With software you can keep fiddling and fine-tuning your work until it's "just right." Of course most people can't recognize when fine-tuning becomes homogenization. Programmers know that no matter how hard they look and test, there will always be one bug left in the program.

If you had some need to chart your progress in a task, you could chronicle every little change to your work. Each modification could be archived as a separate document. This is common practice when playing computer games. Recovering from fatal

What Is BMUG?

Good question. BMUG is an educational non-profit corporation promoting the exchange of information. Like any growing organization, it is many different things to its 4000+ international membership.

BMUG, Inc. is a computer user group located in Berkeley, California. The group specializes in computers using a graphic interface. For a while that meant the Macintosh™ but now includes other makes, models and operating systems. BMUG supports many Special Interest Groups (SIGs), a five-line BBS, help-line, software library, weekly meetings and much more. BMUG also puts out a semi-annual 300 page book that we call our "newsletter." Our motto continues to be: *We're in the business of giving away information.*

Come and join in the dialogue every Thursday evening, 6:00 pm - 9:00 pm (or whenever we finish), in the Physical Sciences Lecture Hall on the U. C. campus.

The BMUG Help Line, (415) 849-HELP, provides technical assistance and telephonic hand-holding during business hours (9:00 am - 6:00 pm). If your question can't be answered on the spot, we try to get you in touch with someone that can help. Of course, not every problem can have a happy ending—but we try.

BMUG has many great Special Interest Groups (SIGs). They're a great way to meet people doing or trying to do the same things you are. They include the Alpha/Beta SIGs (for new users and not-so new users), Desktop Publishing, Computer-Aided Design, HyperCard, Music, Professional Users, Programmers, Telecommunications, A/UX, Database Developers and more.

You can reach BMUG at any of the following numbers:

849-HELP (Help Line)
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moves is a snap when you've saved a lot.

When software companies start fooling around with their products the result is a new version. Most new versions add new features and capabilities to software. When we plunk our wad of dough down to buy a program, we expect that the company will stay in business and continue to improve the program. Most users stick with a program that keeps evolving, or that keeps sending them letters promising something new.

Please Release Me

Sometimes the new version is to fix bugs not found before the product was released. This is called a maintenance release. Many programs require periodic maintenance versions because of changes in the Macintosh operating system software.

Sometimes it's hard to figure out what version is what. The current System for the Mac is 6.0.2, meaning it is the second maintenance release (also called a subversion) of the 6.0 System software.

The Mac had a solution for this problem—the version resource. This was a place for programmers to put the version numbers of the application. This resource has been around for years, but it was unsupported, or never read, by anyone. Some programmers put some naughty stuff in there, as a reward for intrepid resource explorers. The roof fell in when the System 6.0 software read the version resource—scatological comments and all.

Under System 6.0 the version resource will appear when you **Get Info** about a particular file in the Finder. It is also read by many About...under the Apple menu.

Subverting the Subversion

Recently some developers are trying a more innovative (bad for the user, of course) release strategy. Changes are made in the software going out the door without a corresponding change to the version or subversion numbers. It's possible to have two copies of a software package on the dealer's shelf that look identical, but aren't—one has the changes and the other doesn't.

This practice saves developers lots of bucks. If a bug is in a particular part of a program that most users don't use, they won't supply a fixed copy until you get into trouble and complain! The squeaky wheel release schedule.

The high-end desktop publishing program, *Quark XPress* 2.0, is a recent culprit (*WordPerfect* too) in this subversion strategy. The HelpLine has gotten lots of calls about *Quark XPress* problems with EPS color separations. These problems have been fixed in subversions seven and higher, but how can the user tell their program's subversion? They don't show up in the Get Info window, or in the About *QuarkXPress* under the Apple menu. The answer is to hold down the **Option** key while selecting the **About** *QuarkXPress*.

Everything Else

BMUG has one of the most up-to-date, comprehensive software libraries around with 300+ double-sided disks filled with the latest versions of public domain or shareware programs and *HyperCard* stacks. New disks are unveiled almost every week at the Thursday general meeting.

Our BBS offers the latest versions of files in our software library as well as news, private mail, rumors, etc. The BMUG BBS is part of the worldwide EchoMac Network on FIDOnet; by calling a local FIDOnet BBS in your area, you would then be able to get in touch with us wherever you are as well as send mail to users everywhere! BMUG is now a part of the international USENET network. With our multi-line capability you are now be able to have access to BMUG almost 24 hours a day. It's easy to use, fun and a great resource.

To get some further information about BMUG please write to: BMUG, 1442A Walnut Street #62, Berkeley, CA 94709. If you prefer to phone our business office call (415) 549-BMUG.

Upcoming Events

December 22:	**No meeting!**
December 29:	Call for Information.
January 5:	BrightStar Technology *HyperAnimator*, Epic modems.
January 12:	IDD *Dreams* (CAD stuff).
January 19:	Pre-Macworld Expo demos (in other words, whoever's brave enough to show up).
January 26:	Interleaf *Publisher* (Desk-Top Publishing stuff), MicroSeeds *Redux*. ■

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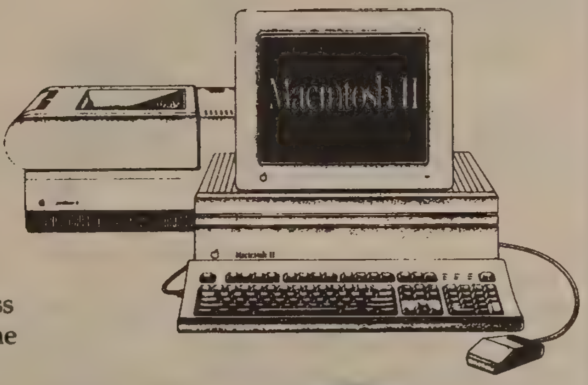

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HYPERCARD

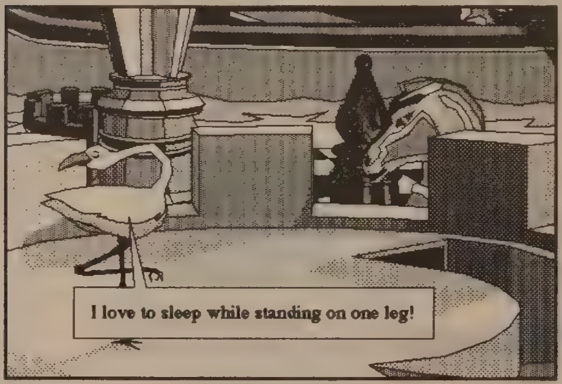
BY BIRRELL WALSH

HyperCard Gifts For The Last-Minute Shopper

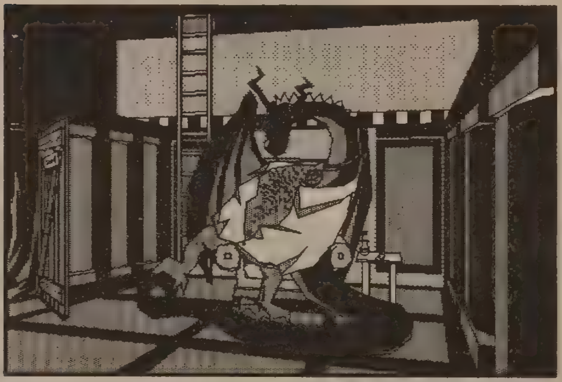
If you (like me) are dawdling and delaying that last shopping—well, there's no place to hide. We are going to talk about some excellent products that you can buy and give.

Manhole

Manhole is like Wonderland. You begin by climbing a beanstalk—up to a magic tower at night, or down to an island near a sunken ship near it. In your travels you visit a dark tower, a dragon's home (with a VCR!), a walrus who leads you into an elevator.


I love to sleep while standing on one leg!

In Mediagenics surrealistic game Manhole, this flamingo lives at the top of a tower in a dark field. Or is it on a rook on a chessboard?



This dragon talks. He also has a VCR remote control that leads you to distant parts of the Manhole world.

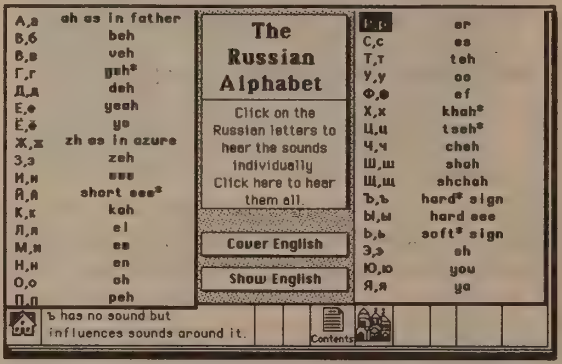
I wish I could put a working copy in your hand for a few minutes. You are in a surrealist, interactive cartoon world. Still pictures we can put on a magazine page don't convey the pleasure of having a walrus talk to you—or having a picture on a wall dissolve to the place it portrays. The characters talk to you. A drawer opens and in it you find a working piano.

I found that this multistack game had two problems: it takes four megabytes on your hard disk, and it crashes from time to time. But if you have the room, this is one of those products that charms everyone. My father-in-law disappeared into it for two hours on his first encounter. We have spent days with it. I have seen 11 and 12 year-olds stay with it for hours at a time. I suspect any kid over 6 could use it. It's available from software stores everywhere.

Manhole
$49.95
from:
Mediagenic
3885 Bohannon Drive
Menlo Park, CA 94025
415-329-0800

HyperGlot

I have always wished that language lessons could be interactive. Now they are. The *HyperGlot* products are language tutors. They pronounce what you see on the screen. It is particularly pleasant to have this pronunciation for Russian, because (in most of America) there are no native Russian speakers to serve as models, and the Russian alphabet overlaps ours with some familiar letters having different pronunciations: ("CCCP" in Russian is "SSSR," the Soviet Union). The *HyperGlot* stacks show you the Russian and will pronounce any letter or word that you click on. They will drill you on vocabulary and lead you through grammar. This is a very competent, very useful educational service. There are stacks for French, Spanish and German as well.



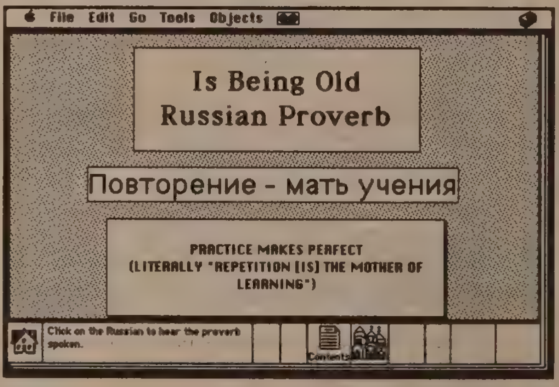
The Russian Alphabet

А,а	ah as in father
Б,б	beh
В,в	veh
Г,г	geh*
Д,д	deh
Е,е	yeah
Ё,ё	yo
Ж,ж	zh as in azure
З,з	zeh
И,и	eee
Й,й	short eee*
К,к	kah
Л,л	el
М,м	em
Н,н	en
О,о	oh
П,п	peh
Р,р	er
С,с	es
Т,т	teh
У,у	oo
Ф,ф	ef
Х,х	khah*
Ц,ц	tseh*
Ч,ч	cheh
Ш,ш	shah
Щ,щ	shchah
Ъ,ъ	hard* sign
Ы,ы	hard eee
Ь,ь	soft* sign
Э,э	eh
Ю,ю	you
Я,я	ya

Click on the Russian letters to hear the sounds individually
Click here to hear them all.

ъ has no sound but influences sounds around it.

HyperGlot's language stacks talk. Native Russians recorded the pronunciation.



Is Being Old Russian Proverb

Повторение - мать учения

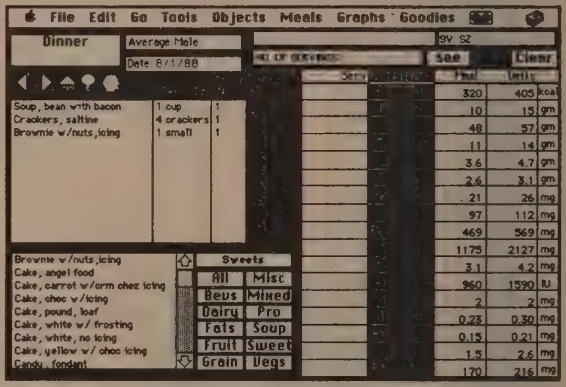
PRACTICE MAKES PERFECT
(LITERALLY "REPETITION [IS] THE MOTHER OF LEARNING")

Click on the Russian to hear the proverb spoken.

Russians love proverbs, so the HyperGlot stacks give you some.

Stack prices vary from $39.95 down to $19.95. If you have a linguist in the house, you want to know about *HyperGlot.*

HyperGlot Language Stacks
505 Forest Hills Blvd.
Knoxville, TN 37919
505-558-8270



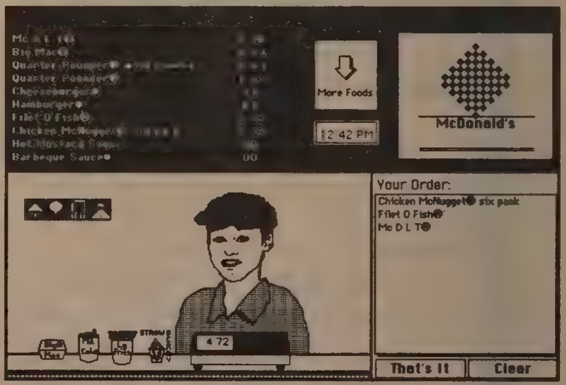
Dinner
Average Male
Date 8/1/88
9V SZ

Soup, bean with bacon	1 cup	1
Crackers, saltine	4 crackers	1
Brownie w/nuts,icing	1 small	1

320	405	kcal
10	15	gm
48	57	gm
11	14	gm
3.6	4.7	gm
2.6	3.1	gm
21	26	mg
97	112	mg
469	569	mg
1175	2127	mg
3.1	4.2	mg
960	1590	IU
2	2	mg
0.23	0.30	mg
0.15	0.21	mg
1.5	2.6	mg
170	216	mg

Brownie w/nuts,icing
Cake, angel food
Cake, carrot w/crm chez icing
Cake, choc w/icing
Cake, pound, loaf
Cake, white w/ frosting
Cake, white, no icing
Cake, yellow w/ choc icing
Candy, fondant

RDAide is a professional nutritional planner for your New Year's resolutions.



Your Order:
Chicken McNugget® six pack
Filet O Fish®
Mc D L T®

(Fast Food Calculator) Want to convince the kid that fast food is fattening? Try the Fast Food Calculator from PAGE.

Nutritional Information

None of us want to hear about nutrition during the holidays. But right after the holidays, these stacks can help you carry out your New Year's resolutions. *RDAide* (from Recommended Daily Allowance) is a fullscale nutritional planner than can help you to plan a long-term nutritional program. It provides records for what you eat. It shows the nutritional

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PS/2 Model 60 with 70 MB	3550
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PS/2 Model 80 with 44 MB Hard Drive	4200
PS/2 Model 80 with 70 MB 2 MB RAM	4700

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Paintjet Color	999
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Fonts and Memory Boards	Best Price

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286-12 MHz 640K	$1575
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286-12 MHz 1 MB 60 MB	4750
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386-20 MHz 1.2 Floppy	3550
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SLT 286 Model 20 640K 20 MB VGA Screen	$3699
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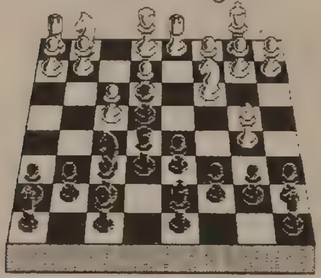
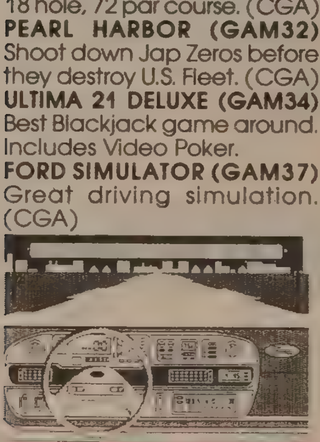
GAMES

ARCADE GAMES (106) Has Kong, 3-D Pacman, Bricks, Pango. (Requires color.)
BASIC GAMES (107) Pacman, Lunar Lander, Startrek, Meteor, Breakout, and others.
CARD GAMES (109) Canasta, hearts, draw poker & bridge.
STRIKER (110) Defender-like game. "Top Gun" in space.
FLIGHTMARE (112) Futuristic fighter pilot game. (Requires color graphics adapter.)
SLEUTH (117) Who done it?
DND (119) Like Dungeon and Dragons.
ROUND 42 (120) Better than Space Invaders. 42 levels.
GAMES IN BASIC (124) Lander, biorhythms, desert, Phoenix, Star Wars, others.
QUEST (152) Role playing adventure fantasy game. (Requires CGA.)
SPACE WAR (158) Dogfight in outer space, using phasers, photon torpedoes, etc.
BRIDGE PAL (171) Complete game of contract bridge, with tutorial.
FENIX (193) Just like the famous arcade game.
PINBALL GAMES (197) Pinball, Rain, Twilight Zone, Wizard, etc.
KID-GAMES (GAM8) Animals math, clock game, alphabet, etc.
CHESS (GAM9) Incredible. 2D and 3D. Many levels. Play back moves, store games.



EGA RISK (GAM11) World domination in great color. Includes EGA Asteroids.
PC PRO-GOLF (GAM27-28) Great graphics. Complete 18 hole, 72 par course. (CGA)
PEARL HARBOR (GAM32) Shoot down Jap Zeros before they destroy U.S. Fleet. (CGA)
ULTIMA 21 DELUXE (GAM34) Best Blackjack game around. Includes Video Poker.
FORD SIMULATOR (GAM37) Great driving simulation. (CGA)



MUSIC

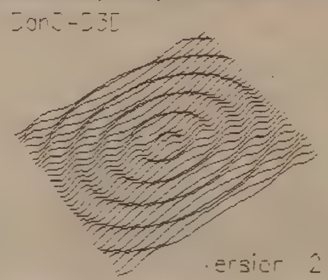
PIANOMAN 3.2 (301) Turn your keyboard into a piano.
PC-MUSICIAN (302) Compose, save, and play music.
CHRISTMAS SONGS (311) Play your favorites on a PC.

WORD PROCESSING

PC-WRITE 2.71 (401-402) (2 disks) Latest version of this popular program w/spelling checker.
PC-TYPE+ (421-423) (3 disks) Excellent. Includes mail merge, 100,000 word spelling checker. Interfaces with PC-File+, PC-Style.
MAXI-MAX (432) 59 macros to use with Word Perfect 4.2 or later. 11 templates for forms, border designs, etc.

GRAPHICS

KEYDRAW CAD SYSTEM (1001, 1002, 1065) (3 disks) Popular. Also uses mouse. (Requires color graphics - CGA.)
DANCAD 3-D (1051, 1052) (2 disks) Create 3-D graphics. Rotate, magnify, etc. Runs on CGA, EGA, or Hercules.



SIDEWAYS (1007) Prints text sideways. Useful for spreadsheets.
SIMCGA/HGCIBM (1027, 1062) (2 disks) Use with Hercules graphics card/ compatibles to run programs requiring CGA on your monochrome PC.
IMAGE 3-D (1048) Create and edit 3-D objects. Move, scale, rotate and tip image.
FINGERPAINT (1050) Use keyboard or mouse to draw. Like MacPaint. (Requires CGA or EGA.)
FANTASY (1057) Create flowing graphic images with mouse or keyboard. (CGA).
FLOWCHARTING (1078-1079) Complete system for flowcharts, organizational, electrical, etc., with symbols.

RELIGION

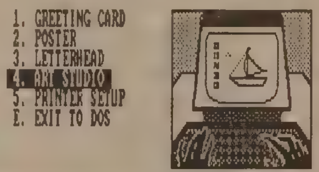
THE BIBLE (3301-3306) (6 disks) Old Testament, King James version.
THE BIBLE (3307-3308) (2 disks) New Testament, King James version.
WORD WORKER (3309-3310) (2 disks) Bible search program. New Testament, King James version.
BIBLEMEN (3330) Excellent Bible quiz program.

BASIC

PC-PROFESSOR (1401) BASIC tutorial. Good.
BASIC PROGRAM GENERATOR (1402) The menu driven way to write programs.
B-WINDOW (1407) Give windowing capabilities to your Basic program.

UTILITIES

HOMEBASE (2608, 2612, 2613) Complete desktop organizer. Great!
LIGHTNING PRESS (2718) Printshop clone. Includes graphics for many uses.



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1. GREETING CARD
2. POSTER
3. LETTERHEAD
4. ART STUDIO
5. PRINTER SETUP
E. EXIT TO DOS
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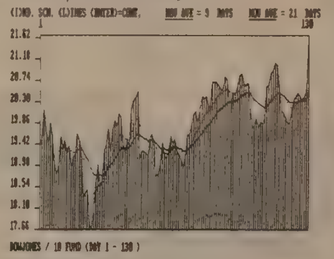
PROFESSIONAL MASTERKEY (2805) Like Norton's. Retrieve deleted files. A lifesaver.
BAKER'S DOZEN (2821) 13 utilities from Buttonware.
AUTOMENU (3003) Make PC menu driven. Incl. passwords.
SCREEN (3006) Save your monitor from screen burn-in.
DOT MATRIX FONTS (3061-3062) (2 disks) Print your text in different fonts. Works with most printers.

ACCOUNTING/FINANCE

MARKET CGA (BUS17) Performs sophisticated analysis on stocks, funds, etc. (EGA version is BUS16).



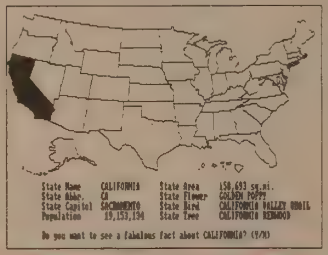
BILLPOWER+ (BUS40) Bill clients for time and materials, advances, retainers, etc. Computes taxes, past due interest, etc. Has full G/L.
CPA LEDGER (706-708) (3 disks) Complete general ledger for corporations, partnerships or sole proprietors.
PERSONAL FINANCE MANAGER (715) Household budget manager. Keep track of checking, savings, investments.
PAYROLL USA (725-726) Up to 2,000 employees in any state. dBaseIII and Lotus compatible. Complete P/R system.
EXPRESS CHECK (786) Check acount with running balance, monthly reports, etc. Prints checks.
FINANCE MANAGER II (774-775) (2 disks) For personal or small business financial management.

SPREADSHEETS

AS-EASY-AS (505) Great. Includes screen help menus. Utilizes function keys. A Lotus clone that reads Lotus files.
PC-CALC+ (512-514) (3 disks) Jim Button's famous Lotus clone.

EDUCATION

FUNNELS AND BUCKETS (201) A fun way to learn math.
MATHPAK (202) Tutorial with lessons in higher math.
PC-TOUCH (204) Learn typing.
BASIC TUTORIAL (208) Learn programming with BASIC.
BEGINNING SPANISH (211) Tutorial.
SPANISH II (232) Sequel.
BIBLEQ (214) Learn the Bible with this Q-A tutorial.
FACTS 50 (239) Geography lessons for U.S. Nice graphics.



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State Name     CALIFORNIA     State Area     158,693 sq.mi.
State Abbr.    CA             State Flower   GOLDEN POPPY
State Capitol  SACRAMENTO     State Bird     CALIFORNIA VALLEY QUAIL
Population      19,153,134    State Tree     CALIFORNIA REDWOOD

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APPLICATIONS

FORM LETTERS (1907) Commonly used form letters and business applications.
EZ-FORMS (1908) Make forms to meet different needs.
MANAGER'S PLANNER (1920) Daily planner. Prints out.
HOME INVENTORY (1966) Track all your possessions.
BIORHYTHM (1990) Display the 3 biological cycles: physical, emotional, intellectual.
FAMILY HISTORY (2203-2204) (2 disks) Create files and genealogical reports.
DR DATA LABEL (2327) Powerful mailing list program. Customize labels to size.
LOTTO PROPHET (2364) Best Lotto program we've seen.
CITY DESK (2513) Simple desktop publisher.

SPREADSHEET TEMPLATES

LOTUS MACROS (601) Save hours of work. (Req. Lotus)
LOTUS SPREADSHEET TEMPLATES (602) Ready-made. (Requires Lotus 1-2-3)
GOAL-SEEKER V3.5 (624) Achieve objectives by changing spreadsheet variables and seeing result. (Requires Lotus.)
LOTUS TUTORIAL (630) Learn Lotus (requires Lotus).

DOS

DOS TUTORIAL (1301) Teaches you to use DOS.
STILL RIVER SHELL (1304) Run DOS commands from a menu. Makes DOS easy.
BATCH FILE TUTORIAL (1305) Utilize batch file processing.
MORE DOS TIPS (1318, 1323) (2 disks) More about DOS.
HELP DOS (1326) On line DOS help with menus. Includes DOS dictionary of terms and a hints menu.

TELECOMMUNICATIONS

Q-MODEM 3.1 (1101, 1102, 1144) (3 disks) Powerful but easy to use. Fast.
RBBS V16.1A (1107-1109, 1150) (4 disks) Multi-user BBS.
PROCOM 2.42 (1112-1113) (2 disks) Hacker's delight. Redial capability. Latest version.

SECURITY/HACKING

UNPROTECT PROTECTED PROGRAMS (1202) Make backups of protected software.
UNPROTECT II (1203-1204) (2 disks) Ways to backup commercial software.
UNPROTECT III (1205) Unprotect Softguard protection.
UNPROTECT IV (1206) More programs you can unprotect.

ADULTS ONLY

ADULTS ONLY (2901) Animated. Req. CGA.
MAXINE (2902) Incredible. (CGA)
STRIP POKER (2903) Pick opponent (CGA)
BAD-BAD (2904) Adventure game.
ASTRO-(BLEEP) (2905) Arcade game (CGA)
X-RATED COLOR SHOW (2915) Beautiful girls. (CGA)
X-RATED PRINTSHOP (2909) Graphics for Printshop.

DATABASE PROGRAMS

PC-FILE + 2.0 (801, 805, 837) (3 disks) Rated better than dBase III+ by Consumer Rpts.
PC-GRAPH (802) Create graphics from PC FILE.
FILE EXPRESS 4.0 (803-804) Powerful system. Allows 32,000 records. Sorts up to 10 key fields.
DBASE III+ ROUTINES (851-852) (2 disks) Latest utilities to help you utilize dBase III+.

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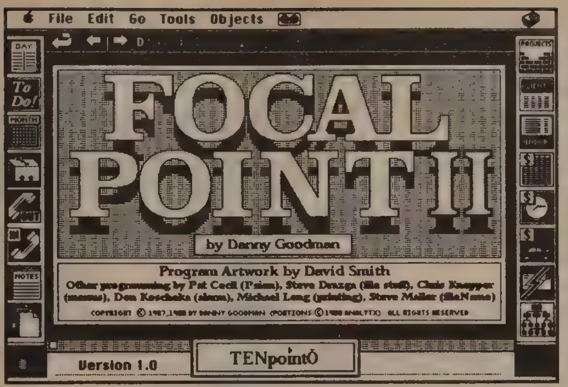
values for food. It will print reports. It will graph reports and charts.

I am often suspicious of the value of such programs, so I was interested to note that *RDAide* was written by professionals—a registered dietician and a dentist. It was also debugged by professionals, with field-testing by student dieticians at the University of California. That is a tough test to pass. This is an information-base that will last; calories don't change very fast. If you want to monitor your nutrition over the long term, this is an excellent stack to use.

Also available from the same people is *The Fast Food Calculator*. It is designed to show what you get from fast foods. Unlike most programs that just inveigh against quick meals fried in tallow, *The Fast Food Calculator* names names and tells you all the good news about food values, calories—and even costs—in common fast food resturants. This is a stack that would serve well at a high school.

RDAide
$84.95
The Fast Food Calculator
$15.00 (yep, only $15.00)
from:
Printing and Graphic Educational Tools
450 Taraval St. Box 235
San Francisco, CA 94116



FOCAL POINT II

by Danny Goodman

Program Artwork by David Smith

Other programming by Pat Cecil (Prism), Steve Drazga (file stuff), Chris Knepper (menus), Don Koscheka (alarm), Michael Long (printing), Steve Maller (fileName)

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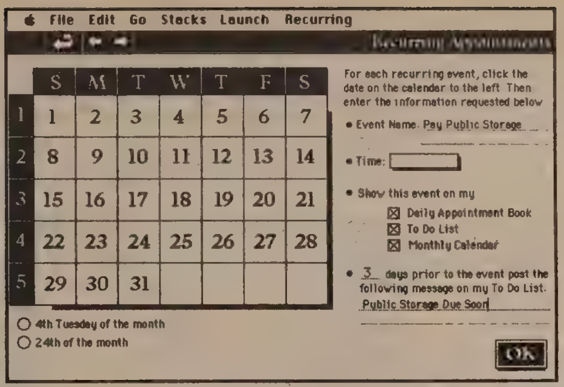
Version 1.0

TENpointO

A major revision of the "Life Manager" Focal Point II by HyperCard guru Danny Goodman.



	S	M	T	W	T	F	S
1	1	2	3	4	5	6	7
2	8	9	10	11	12	13	14
3	15	16	17	18	19	20	21
4	22	23	24	25	26	27	28
5	29	30	31				

○ 4th Tuesday of the month
○ 24th of the month

For each recurring event, click the date on the calendar to the left Then enter the information requested below

- Event Name: Pay Public Storage
- Time:
- Show this event on my
  - ☒ Daily Appointment Book
  - ☒ To Do List
  - ☒ Monthly Calendar
- 3 days prior to the event post the following message on my To Do List: Public Storage Due Soon

Focal Point II will now put recurring events into your calendar for you.

Focal Point II

Danny Goodman, as we all know, wrote *the* book on *HyperCard*. We all had to go out and get a copy of his *HyperCard Handbook* to find out the potential of *HyperCard*, since Apple's documentation is scanty at best.

The good Mr. Goodman also wrote the most intricate of all *HyperCard* programs, *Focal Point*. Through the door on deadline day came a major revision. *Focal Point II* is an extension and a major polishing of the first version of this life-manager. As a reviewer of both DOS and Mac products, I can say that there is nothing like *Focal Point II* anywhere else.

Focal Point II allows you to plan your day, your week, your month. Ah, you say, a scheduler. Well, it also allows you to track projects. (Aha, a project manager...). How about billing time and issuing invoices? Or collecting all your contacts in one place? Or dialing your calls for you? Or sending and receiving mail on your network (and allowing one manager to delegate tasks through the same network to several people)? Launching other applications? Tracking expenses and summarizing them? Oh, yes—*Focal Point II* has a runtime version of TenPointO's *Reports* and sixty different reports. There is really no word for this kind of software save "Life Manager."

I am going to have to work with this product for a fuller review later, but when TenPointO does something, they do it well and back their work. If you know someone who has to track a business (especially a small business or a professional practice), get them *Focal Point II*.

Focal Point II
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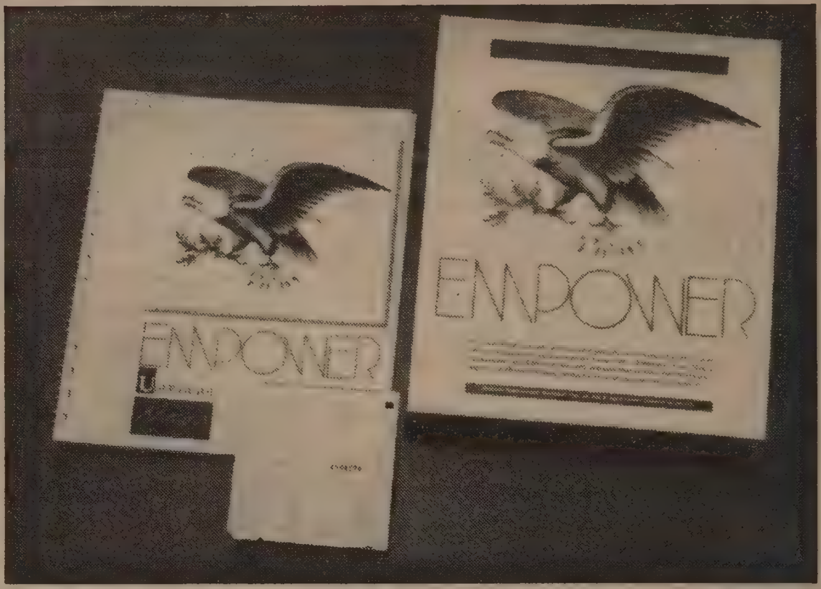
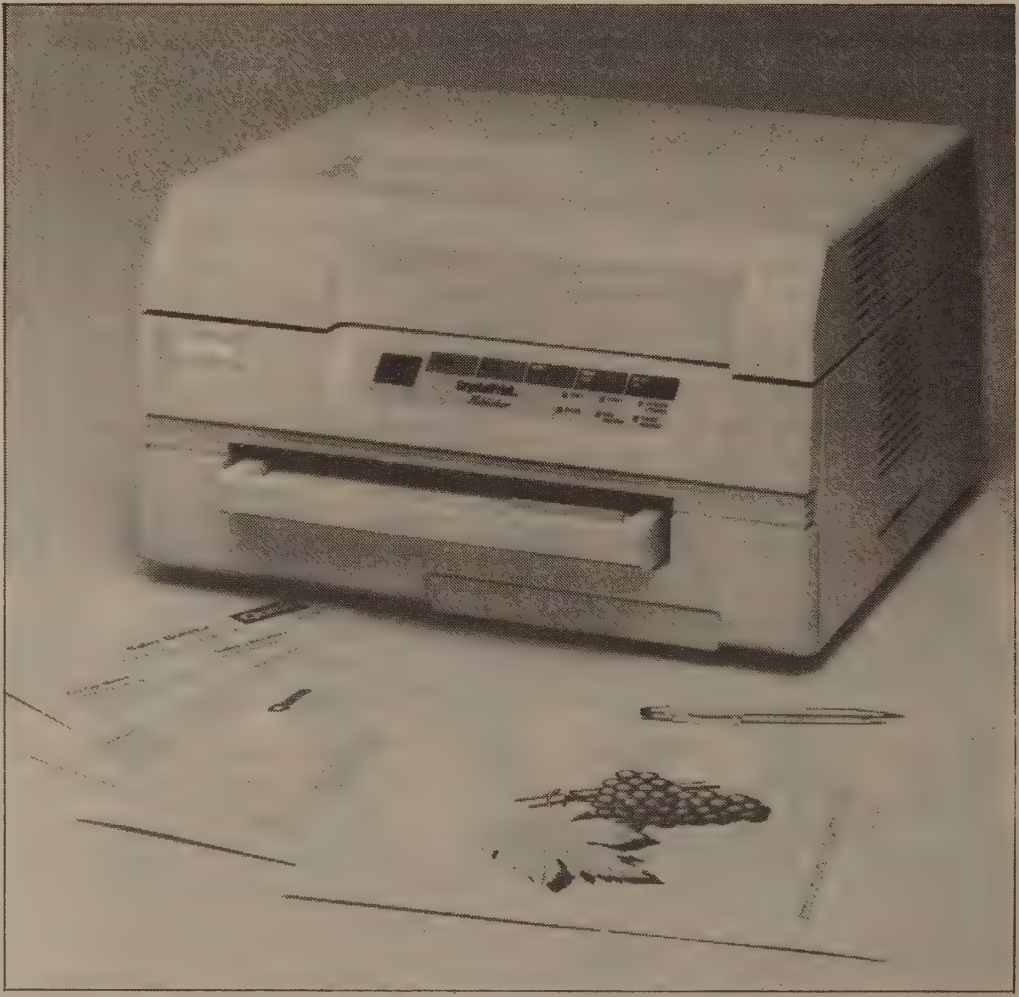
Empower Works Automatically, Assigns Password By User Instead Of File



With *Empower* data encryption software, files are automatically encrypted as they are created without the user having to initiate a separate procedure. The ability to access a file or folder is determined by separate passwords assigned to individuals or groups, not files. A user is assigned one password to open any of them, thus making it unnecessary to remember a list of file passwords. A simple control panel allows the Security Administrator to easily determine which people can see what files and folders on a hard disk. Encryption can be applied to hard drives and diskettes, and floppy drives can be disabled with *Empower*. ($395.) Magna, 2540 N. First Street, Suite 302, San Jose, CA 95131. (408) 433-5467.

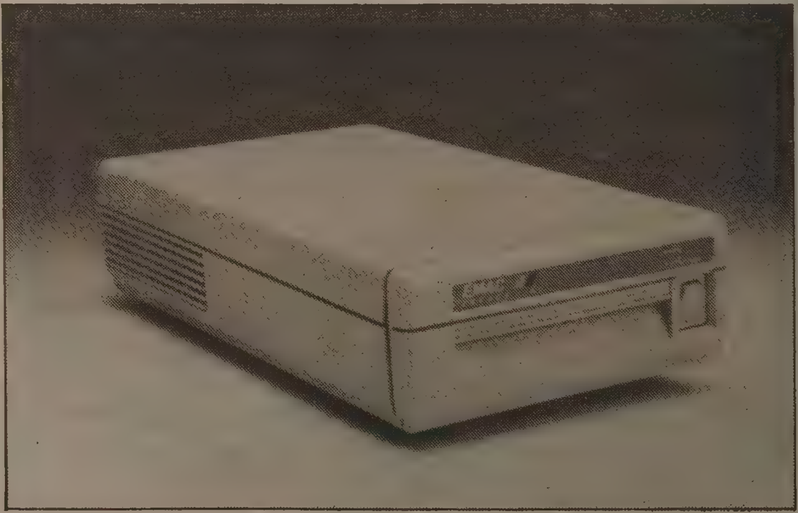


RISC Technology Comes To The Laser Printer In New PostScript Machine

It was only a matter of time until someone put a RISC chip in a laser printer. It's been done in an affordable PostScript compatible machine the manufacturer claims will outperform Apple's top-of-the-line IINTX by five to eight times. Utilizing a RISC chip specifically designed for graphics printers, the CrystalPrint Publisher comes with 3 megabytes of RAM to handle plenty of downloadable fonts. It combines a third-generation page printer engine from Casio Computer with the Qume printer controller. Eleven built-in font families come standard in the CrystalPrint, which has the smallest footprint of any current laser printer. ($4499.) Qume Corporation, 500 Yosemite Drive, Milpitas, CA 95035. (408) 942-4000.

These Compact Hard Drives Deliver Full Sized Performance

The new line of compact hard drives from EMAC furnishes the Macintosh user with large storage capacities in a small box. About the size of an average hard-back novel, EMAC hard drives have capacities of 40, 60 and 80 megabytes. Access times range from 19 milliseconds for the Impact-40 Plus and Impact-80 Plus to 26 milliseconds for the Impact-40 and Impact-60. All drives feature front-mounted power switches, status lights, auto head park, an external SCSI address selector and an external terminator for daisy-chaining. Prices range from $1295 to $1715. Everex Systems, Inc., EMAC division, 48431 Milmont Drive, Fremont, CA 94538. (415) 498-1111.



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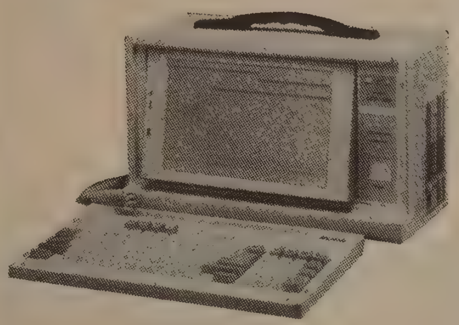

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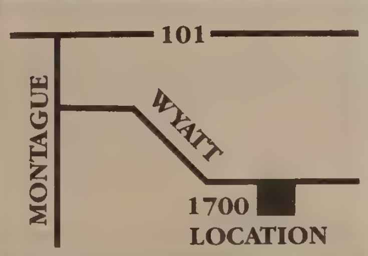
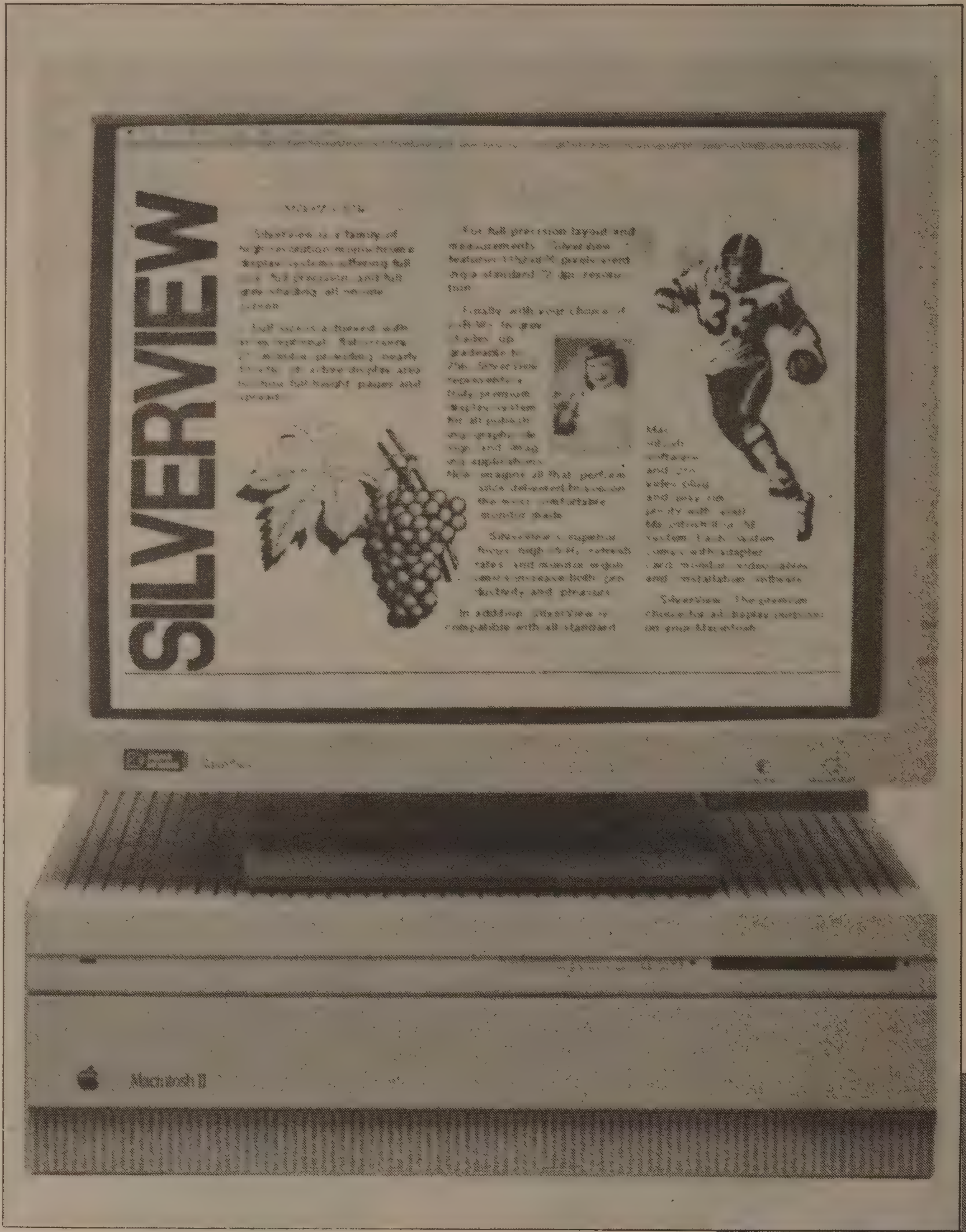


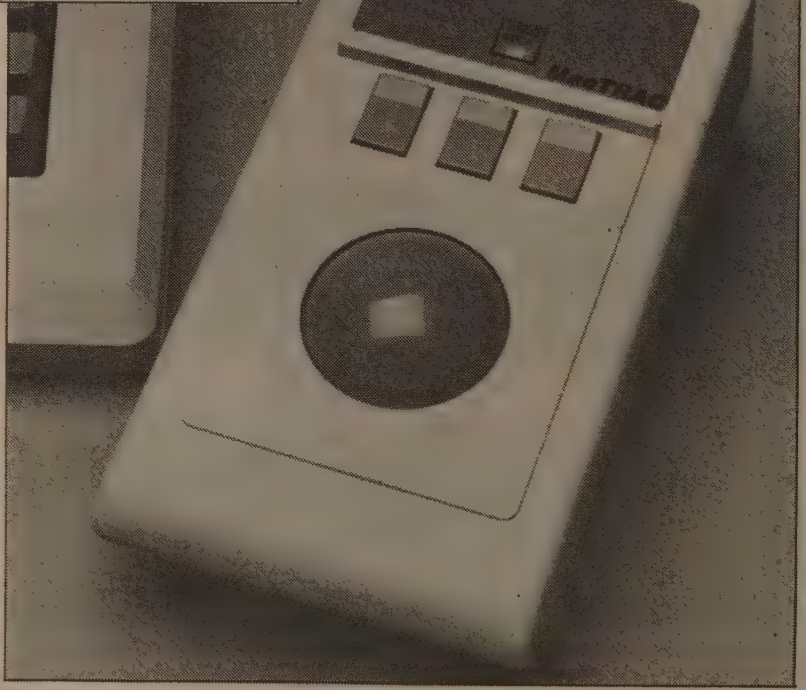


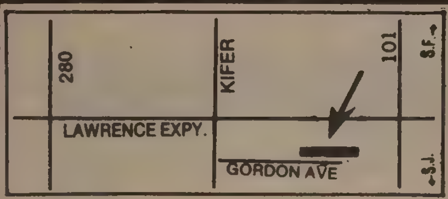
Gray Scale Monitor For Mac II Displays Two Full Pages At Once

The SilverView S8 is a gray scale monitor that can display up to 256 shades of gray on a flat screen large enough to hold two full pages side by side in exactly 72 dpi. This 21" monitor from Sigma Designs helps eliminate the need for scrolling and panning. With 1152 X 870 pixels yielding a standard 72 dpi resolution, the monitor is ideal for DTP and many applications written for the Macintosh. A refresh rate of 76Hz provides a solid, flicker-free image, and the flat screen reduces distortion and surface glare. The SilverView S8 has a full tilt and swivel base to adjust the viewing angle, and front panel on/off, brightness and contrast controls. ($2,999.) Sigma Designs, Inc., 46501 Landing Parkway, Fremont, CA 94538. (415) 770-0110.

Trackball Allows Comfortable Use By Lefties

Those who want to replace their mouse with a space-saving trackball now have a new one to choose from. MicroSpeed, long a maker of PC trackballs, recently introduced the MacTRAC, a three-button trackball designed for either left or right handed operation. A center button activates the cursor drag lock which eliminates having to hold a pick button while dragging the cursor. An indicator light designates if the drag light is on or off. With a footprint of less than 4-1/4" wide, the MacTRAC takes up far less desktop space than a mouse. ($99.) MicroSpeed, Inc., 5307 Randall Place, Fremont, CA 94538.





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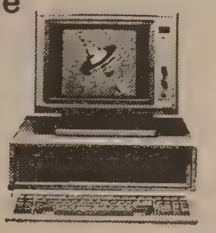

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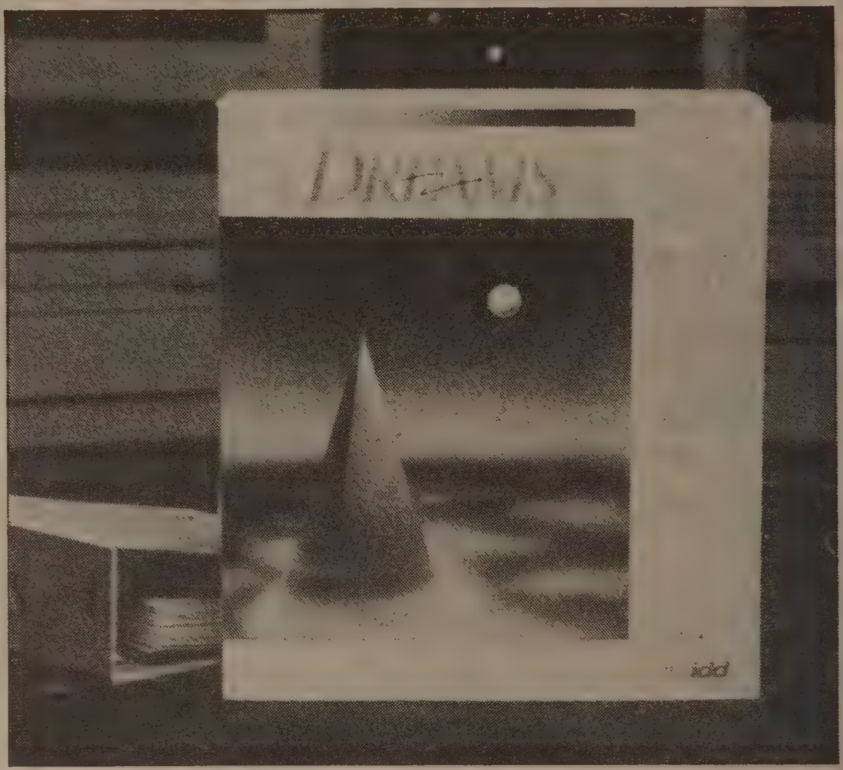
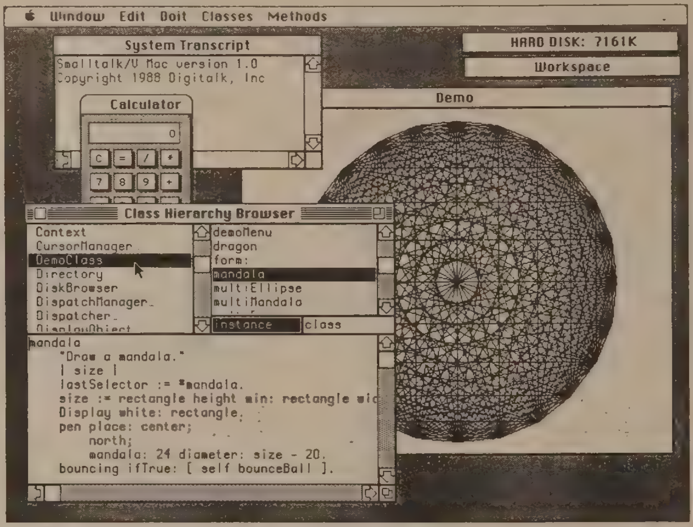
AEC CAD Designers Receive New SoftWare Offering From IDD

Innovative Data Design, Inc., maker of the popular *MacDraft* program, has recently introduced *Dreams*, which it claims takes a new, more intuitive approach to CAD. The application incorporates *MacDraft's* popular object-oriented shape tools, arranged on easy-to-understand "floating palettes" and pop-outs for quick accessibility. *Dreams* comes with a large drawing size capability of up to 8'X8', real-world scaling, new geometric tools, enhanced object manipulation capabilities, layers limited only by memory, associated dimensioning, advanced editing functions, symbol libraries, PostScript and other features. It allows users to create new colors, edit existing shades and import colors from different documents—up to 256 per drawing. *Dreams* permits the tailoring of drawing environments for different disciplines with the addition of specialized modules. Registered *MacDraft* users may purchase *Dreams* for $200, otherwise it costs $500. Innovative Data Design, Inc., 2280 Bates Ave., Suite A, Concord, CA 94520. (415) 680-6818.





```
Smalltalk/V Mac version 1.0
Copyright 1988 Digitalk, Inc
```

```
Context
CursorManager
DemoClass
Directory
DiskBrowser
DispatchManager
Dispatcher
```

```
demoMenu
dragon
form:
mandala
multiEllipse
multiMandala
```

```
mandala
    "Draw a mandala."
    | size |
    lastSelector := #mandala.
    size := rectangle height min: rectangle wid
    Display white: rectangle.
    pen place: center;
        north;
        mandala: 24 diameter: size - 20.
    bouncing ifTrue: [ self bounceBall ].
```

New Smalltalk/V MAC Is Fully Integrated With The Mac Environment And Maintains Compatibility With Smalltalk/V 286

Smalltalk/V, a popular object-oriented programming product widely used in the making of expert systems software, is available for the Macintosh. Programmers can now have the full-blown capabilities of Smalltalk on any Mac from the Plus up. Smalltalk/V MAC is fully integrated with the Macintosh environment and contains all the features of Smalltalk/V 286. The new Mac version of Smalltalk/V includes multi-tasking and provides portability from the 8088/80286/80386 PC family to Macintosh products. It supports very large data structures allowing developers to build systems limited only by the memory on the computer. A book with twelve chapters of tutorials is included with Smalltalk/V MAC, as well as an on-disk tutorial with step-by-step examples. Bit and form editors and a Prolog compiler written in Smalltalk are also provided ($199.95.) digitalk, inc., 9841 Airport Blvd., Los Angeles, CA 90045. (213) 379-6104.

"Invisible PC" Software Now Available For The Macintosh SE, II

SoftPC is an application that allows Macs to run MS-DOS applications without modification and with PC/XT performance. To the Finder, *SoftPC* looks like an application program, but to MS-DOS it looks like an 8086-based IBM PC. *SoftPC* precisely emulates an IBM PC/XT including its processor, peripherals and operating system. This all-software emulator lets users move files between DOS formats and Mac formats in a seamless manner. For example, *SoftPC's* file sharing architecture lets users copy from a DOS application in one window and paste into a Mac application in another. And in network environments, *SoftPC* allows Macs to communicate with IBM PCs and clones as if they were one of them. The application creates a window within the display which looks like an IBM monitor, complete with on/off switch. *SoftPC* must be run on a Mac II, or on an SE with a 68020 or 68030 enhancement card. Two megabytes of RAM are required. ($595.) Insignia Solution Inc., 787 Lucerne Drive, Sunnyvale, CA 94086. (408) 446-2236.

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The ARGO 3000A is a screamer. Operating at 16 MHz with zero wait states, this 80386 based personal computer literally flies through programs. The 3000A significantly boosts performance and productivity when running "processing intensive" applications. Expert systems, scientific and engineering application, large database systems and spreadsheets, as well as multi-user and network applications, can all benefit from the 3000A's tremendous speed and power.

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The ARGO 3000A uses a 64K cache of very fast (45ns) static RAM to provide 16 MHz zero wait state operation. The RAM cache is a technology from the mainframe world, which increases effective memory transfer rates and processor speed. Even extended memory is cached, therefore most read operations, including those from expansion board memory, will have no wait states, yielding maximum system throughput.

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EXPANDABLE

In addition to its eight slots the 3000A offers front access to as many as 5 half-height drives. There's plenty of room for hard drives as well as additional floppy disk drives and an internal tape drive.

MADE IN THE U.S.A. BY EVEREX

The ARGO 3000A is designed and manufactured in the USA; the system is engineered to provide superior performance and reliability. All Model 3000A computers are burned in and completely factory tested to assure complete reliability. MADE BY EVEREX.

TODAY AND TOMORROW

While some computers are selling on future promises rather than current features, the ARGO 3000A works with available software and hardware to increase productivity today as well as tomorrow.

AT COMPATIBLE

The ARGO 3000A uses industry-standard expansion slots so the system can easily be expanded with AT compatible peripherals. Memory boards, graphics adapters, I/O ports, and modems can all be of the standard AT type. Because the system already comes complete with a full 1MB of memory, there is no need for expensive 32-bit memory expansion boards.

* **MONOGRAPHICS SYSTEM PRICE INCLUDES:** In addition to above features, EVEREX Evergraphics plus Hercules compatible 132 x 44 Hi-Res Video Card, 12" Hi-Res Amber Monitor, 42MB SEAGATE ST 251 HD, and Parallel Printer Port.

** **EGA COLOR SYSTEM PRICE INCLUDES:** In addition to the standard features, EVEREX 752 x 410 Hi-Res EGA Auto Switch Video Card, EVEREX EGA Color Monitor, 42MB SEAGATE ST 251 HD, and Parallel Printer Port.

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EXPANDABILITY

The ARGO 1700C has eight industry standard expansion slots, four 16-bit and four 8-bit, leaving plenty of room for expansion with memory boards, graphics adapters, I/O boards, network cards, a modem, etc. These are industry standard slots which can accommodate literally hundreds of currently available expansion products.

SPEED SELECTABLE

In order to provide compatibility with speed sensitive programs, the 1700C furnishes speed selection of 12 or 8 MHz. To make the selection as easy as possible, it can be accomplished from the keyboard or by front panel switch. To provide increased hardware compatibility the 1700C provides configurable wait states for the bus expansion slots.

A TRUE 12 MHz

The machine uses an 80286-12 microprocessor to offer true 12 MHz performance with complete reliability. Unlike some machines that push an 8 or 10 MHz processor beyond their rated speed, the ARGO 1700C uses an actual 12 MHz processor running at 12 MHz, Zero Wait State!

MADE IN THE USA! BY EVEREX

The 1700C is designed and manufactured in the USA to provide superior performance and reliability. Before the Model 1700C is shipped, it is burned-in for 96 hours and then completely tested.

QUICK COMPARISON

MODEL	Everex 1700C	IBM Model 50	Compaq 286	AST Model 140
Microprocessor	80286-12	80286-10	80286-12	80286-10
Check Speed MHz	12	10	12	10
CPU wait state	0	1	1	0
Norton SI rating*	15.3	10.1	11.5	11.5
Expansion slots	8	3	8	7

✓ **MONOGRAPHICS SYSTEM PRICE INCLUDES:** In addition to above features and standard equipment, EVEREX Evergraphics plus Hercules compatible 132x64 Hi-Res Video Card, 12" Hi-Res Amber Monitor with Swivel Base, 20MB SEAGATE HD, and Parallel Printer Port

✓✓ **EGA COLOR SYSTEM PRICE INCLUDES:** Same as above except with EVEREX 752x410 Hi-Res Video Card, EVEREX EGA 14", Hi-Res Color Monitor/Swivel Base & 20MB SEAGATE HD & Parallel Port.

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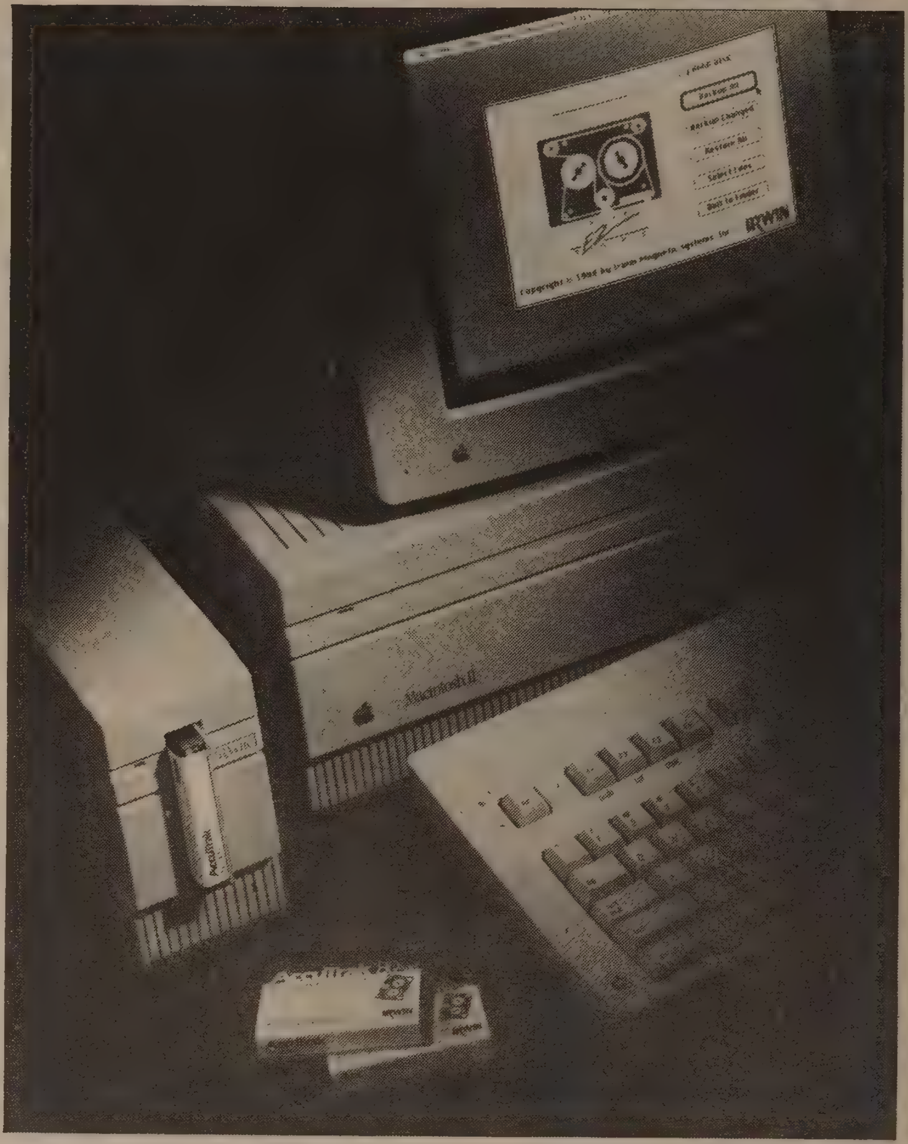
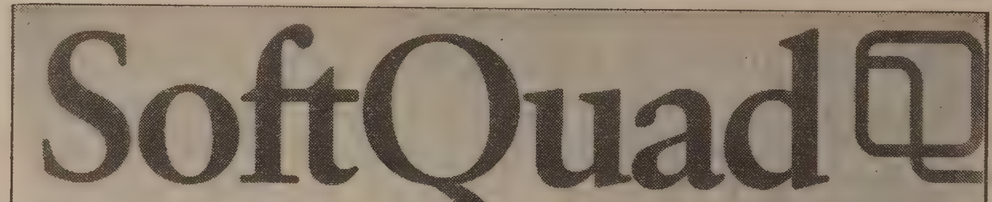
Mac II Tape Backup System Includes Support For A/UX

Two new tape backup systems from Irwin, one 40Mb and one 80Mb, come with *EzTape* backup software that operates identically under the A/UX operating system as under Apple's Finder and MultiFinder. *EzTape-A/UX*, the first iconographic backup software for the Mac II under A/UX, uses Macintosh-style icons to guide data mapping and graphics. Irwin's tape backup systems use the SCSI interface and can be used to move data between DOS and A/UX operating systems with *EzTape* software. ($1395/1595.) Irwin Magnetics, 2101 Commonwealth Blvd., Ann Arbor, Michigan 48105. (313) 996-3300.





Two Packages Bring Publishing Standard To The Mac II

SoftQuad, Inc. recently introduced electronic publishing software that conforms to the Standard Generalized Markup Language (SGML) for the Mac II under the A/UX operating system. *SoftQuad Author/Editor* and *SoftQuad Publishing Software* work separately or together to turn plain text into long documents. *SoftQuad Publishing Software* is the officially licensed and A/UX enhanced version of AT&T's *Documenter's Workbench*. *SoftQuad Author/Editor* is a word processing application designed to produce output for *Publishing Software*. *SoftQuad Publishing Software* provides automatic kerning, hyphenation, capacity for multiple columns, macros and support for spot color separations. Direct PostScript support is available without any third party add-ons, and through *SoftQuad Publishing Software* the Mac II can speak to a broad range of typesetting machines and laser printers. (*SoftQuad Author/Editor*: $495; *SoftQuad Publishing Software*: $995.) SoftQuad Inc., 720 Spadina Ave., Toronto, Canada M5S 2T9. (416) 963-8337.

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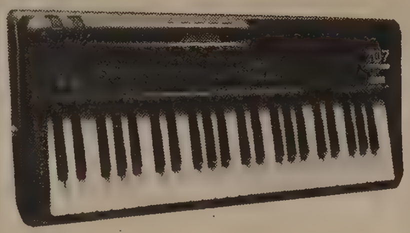

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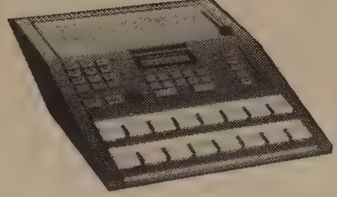

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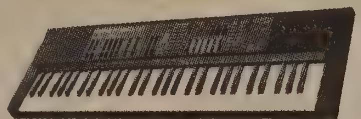

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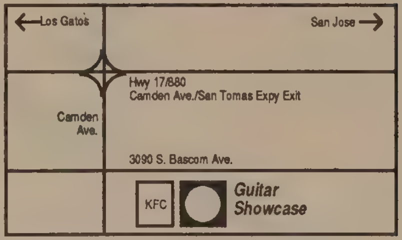

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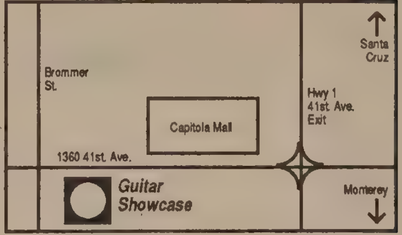

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BY BENNETT FALK

Live Free Or Die

A Short History Of The Internet Virus

As this is written, the great Internet Virus episode is one week old, and the well-known facts of the case are gradually being upstaged by their consequences.

On or about November 2, 1988, someone unleashed a pair of programs on a computer attached to several "sensitive" networks (ARPANET and MILNET among them). The apparent purpose of the programs was simply to copy themselves to any computer for which their host had an Internet address. The copies on each of these new computers would then be run and the programs distributed to yet another generation of computers and run again.

The programs spread quickly from computer to computer, and in a short time as many as 6000 computers were affected. In addition, the programs' mad dash to find new hosts to "infect" was very CPU intensive. Performance on infected computers degraded seriously. Many encountered system problems and were rebooted only to be infected again.

The cumulative effect of this assault was big news. The nation's daily newspapers put the story on the front page, raised the specter of the nation's defense paralyzed by computer hooligans and gave the population a crash course in computer slang.

Everyone learned that programs which mount non-destructive invasions of other people's computers are called "worms," and that the term "virus" is customarily reserved for destructive or data-corrupting invaders. It has been difficult to make this usage hold up in the present case: whether they were destructive or not (a point still being debated on USENET) the spread of the two programs and their effects looked a lot more like a viral epidemic (or an alien invasion) than the steady progress of worms through topsoil.

At length, with much hard work from teams of people at MIT, UC Berkeley and many other network sites, order was restored. The adventures of these programmers and system administrators in encountering and finally dissecting the virus are documented in various USENET newsgroups, and anyone with access to USENET should read their accounts first hand. (The discussion in comp.risks, volume 7, issues 69ff is particularly good).

Thanks to the community-wide effort, there is a good technical description of the virus' operation. Only two versions of the infecting programs were distributed: one for Sun 3 hardware and one for VAX hardware. Both versions were targeted for a particular version of the Berkeley UNIX operating environment. Other machines, other operating systems and even other versions of UNIX were unaffected. Finally, the virus was distributed only over TCP/IP network connections. Computers connected to other sites via UUCP only were unaffected. (TCP/IP stands for Transmission Control Protocol/Internet Protocol; it is a protocol widely used for Ethernet-based networks. UUCP (UNIX to UNIX copy) is a protocol widely used to connect UNIX computers over standard serial lines.)

The virus running on an infected machine could be spread to other machines in a number of ways. Typically, the program would open a TCP connection to a victim and invoke the "sendmail" program. "sendmail" is commonly used to route mail from one computer to others across a network. It is not intended to be used interactively, and because routing mail requires privileged access to network control information, sendmail always runs as "root," the UNIX system's super-user account. The virus exploited the fact that at many sites, sendmail includes a "debug" option that allows the execution of other programs from sendmail.

Once sendmail on a target computer was invoked with the debug option, the infecting program transmitted the source code for a small C program, as well as commands to compile and execute it. Once compiled, this "bootstrap" program could then open its own connection to the infecting machine, download two pre-compiled versions of the controlling program (one for Sun, one for VAX), link this control program on the new machine and execute it.

When the controlling program was started on a newly infected computer, it conducted an extensive search for the addresses of other machines to which it could spread. As soon as a potential victim was found, the controlling program would spawn a copy of itself to attempt the break-in while the search for new victims continued. Repeated spawning of the control program is the most likely cause of the performance problems the virus caused.

Not all machines have the debug option built into sendmail. If the virus was unable to connect to its victim through sendmail, it would attempt to exploit the "finger daemon," a program used to provide a network-wide service that matches names with logins. Failing that, it would try to find accounts without password protection and use the remote shell ("rsh") to copy the bootstrap program to the target machine. If all else failed, it could resort to educated guessing of user passwords. A successful guess would enable the virus to use either rsh or telnet to distribute the bootstrap program.

The virus also did a reasonable job of concealing itself. Once on a new machine, it would hide the files it used by first opening and then unlinking them; the contents of the files would be available to the program, but the files themselves would not be "visible" to other users. Apparently the virus obscured its own argument list at run time, making it more difficult to spot in a listing of active system processes. And of course, various parts of the virus code were encrypted.

During the epidemic itself, system administrators found several creative ways to stop the virus: renaming the linker used to create an executable version of the control program, creating files in the public directory used by the bootstrapping program to conflict with file names the virus would try to create. Emergency patches for the fingerd and sendmail source code were distributed, as well as instructions for patching the binaries for these programs. Eventually, by disassembling the virus' object files, a way of signaling the virus to stop was discovered.

While the virus has been stopped, preoccupation with the virus and related questions runs high. Virus discussions have become a kind of meta-virus on USENET as the UNIX community pauses to consider some weighty questions: Was it the biggest disaster since the ARPANET crash of 10/27/80? Who did the deed? (A Cornell graduate student named Robert Morris, Jr. is the only publicly acknowledged virus-maker suspect.) Was it a public service or simply a nuisance? Are the victims of the virus somehow to blame for having tolerated poor system security? Just how much CPU time did the virus burn up, anyway? Why was it done? What did it cost to repair? Will it result in improved system security? Is it better to discuss security risks publicly or to restrict information about them?

The wondrous thing is that through all these questions and all their conceivable and conflicting answers and all the discussion the UNIX community has mustered on their behalf, there runs a single idea about what it means to use a computer: the idea that a computer is more than a way to make a living, the idea that a computer is more than a tool for personal aggrandizement or national defense, the idea that there is some intrinsic value in sitting at a terminal and being free. ☐

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BUSINESS COMPUTING

BY SUZANNA MUSICK

Does Your Business Need Automation?

As a business owner, you can only keep so much information in your head. As a business grows, tasks, responsibility and authority must be delegated to others. Accurate, timely information is needed by everyone involved in making decisions that affect the business.

In this column we are going to examine the most likely motivations in the decision to automate. You will observe that some of these overlap. Something that affects a business in one area almost always has a ripple effect.

1. Growth: Growth is the number one reason why a business should automate. As a business grows, it takes more time and effort to prepare reports, and management can quickly lose track of key performance indicators. Financial statements are only seen quarterly or once a year. There is not enough time to spot quick moving trends and potential problems.

Retailers often suffer from this problem. Typically they have a large volume of small transactions. As a result, it is all they can do to keep the shelves stocked and ring up sales. They must order inventory well in advance and must sell it shortly after it arrives in order to make a profit and stay in business. Cash flow is critical.

Computers can help in many ways. An inventory control system helps to spot fast- and slow-moving items; a purchasing system provides information on vendor performance and cash requirements; a point-of-sale register and bar-code reader can process sales faster and more accurately.

2. Avoiding redundancy: Another good case for automation lies in the redundancy of manual systems. Information is written down in one place and then transferred to another and another, until—if you are lucky—it finally finds its way into a management report or financial statement.

3. Need for timely information: Many of our clients' first requirement is to prepare an aged accounts receivable report. If their accounting system is manual, invoices are written, then recorded in the sales journal. Cash sales and checks are added to the daily deposit, the items sold are recorded on inventory cards, a customer ledger is updated, and then—if everything goes according to plan—all of this data is filed accurately. By the time an aging report is compiled and typed, the report itself is aged! The information is no longer accurate—checks have been received since the report was prepared and invoices have fallen due. A computerized accounting system allows you to generate an aged accounts receivable that is as current as the last transaction you entered.

4. Need for more information: Many managers wish to track certain kinds of business information but don't because the effort would be too time-consuming or costly. When it is a challenge to get invoices out on time, sales analysis is inconceivable. Business cards of prospective clients are never converted into a mailing list. And there is never enough time to analyze the performance of sales staff in order to reward superior accomplishments and make needed improvements.

5. Inventory control: It seems logical that if a business is selling a great deal of inventory they will certainly make money, but this is often not the case. If products are not priced correctly, if overhead and personnel costs are too high, your bottom line will be affected. If the business is carrying too much inventory, or losing sales by being "out of stock," your profits again will be affected. Automation can help.

An inventory program will tell you what your profit margin is for a particular item or a group of items. It will tell you how many you have in stock and warn you when you get below your reorder level. It will track customer back orders and give you receiving information. You can keep track of where you inventory is being stored, whether it is in multiple warehouses or bins. These are just a few of the inventory reports available for an automated system.

6. Need to obtain bank financing: Any bank or investor will require up-to-date and reliable financial statements before extending credit. And they do not just want to see them at the time of application, they want to see them every month. By keeping your books on a computer, you can have financial statements, as well as the other reports we have been discussing, available upon demand.

While many businesses automate to please their lenders, they usually reap many other benefits. Almost immediately, the other management information now available to them enables them to run their business more profitably.

7. Need for quick turnaround: There are numerous benefits in being able to communicate with other company offices, or with vendors and credit institutions. One of our law firm clients does its banking over a computer. With a single call, the firm's accountant can check balances, make transfers and invest excess monies, thereby making maximum use of their cash. Wholesale clients use their computers to place orders directly with their suppliers. This can cut days off order processing time.

If a business has multiple locations and does not have an interoffice network, accounting information must be gathered from each site and transferred to the home office for consolidation, a time-consuming process which delays the preparation of management reports. Computers at each location could allow for the electronic transfer of accounting information to the "home office" computer, thereby saving considerable time and effort.

Today's computer technology offers automated solutions for virtually every type and size of business. Because of the low cost of microcomputers, even small business owners can computerize their business.

8. Need to comply with contract stipulations: Finally, automation can be a stipulation in a contract. For example, some construction jobs require architects and engineers to use CAD/CAM (Computer Aided Design/Computer Aided Manufacturing) systems. Again, when businesses automate to meet the requirements of others, they most often find a hidden treasure of information they can use to manage their own operations.

As a manager, you need timely and comprehensive reports to make informed business decisions in both the short and long term. Although an aged accounts receivable report is most often requested, there are many other reports which can provide valuable information to the decision-maker. For example, how would you like to be able to answer the following questions about your business?

- How much money are you losing by not taking advantage of discounts?
- What 20% of your clients make up 80% of your business?
- Are jobs being completed profitably and on

Copyright © 1988 by Suzanna Musick. All rights reserved. Suzanna Musick is a Manager in the Computer Consulting Department of Hemming Morse Inc., CPAs. Her experience encompasses a wide range of industries such as distribution, retail, construction, real estate, financial and professional services.

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Instant answers to these questions, and more, lie behind the doors of automation.

To wrap things up, I thought it would be useful to look at some of the benefits specific types of businesses can gain from automation. These benefits apply to each individual business or profession and are only the tip of the iceberg. All of the other benefits discussed above apply as well and should not be overlooked.

Attorneys and CPAs: For businesses which bill by the hour, tracking labor and operating expenses is an arduous and time-consuming task. Without an automated Time and Billing program, bookkeeping staff must spend hours transferring information from individual time sheets to client cards. Invoicing is necessarily delayed. With a computerized Time & Billing system, reports can be generated which show how productively the staff is performing and which areas of the practice are more profitable.

Contractors: A contractor uses job costing to tell if jobs are being completed within budget. Information from accounts payable, inventory and payroll is tracked to each job. A good job costing program can help a contractor spot cost overruns before they get out of control. Further, because construction workers are often union employees, an automated payroll program can make it easier to provide the reports required by union and other Federal agencies.

Financial institutions: These businesses must deal with strict regulatory reporting requirements. They also process large volumes of transactions and must be able to provide accurate and timely information to depositors. Computers help manage the volume as well as the variety of information for these types of businesses.

Manufacturing: Inventory control is as critical to the manufacturer as it is to the retailer. There must be enough inventory on hand to produce the finished goods needed to fill orders, but not so much that it sits on the shelf a long time. A manufacturer needs to keep track of the parts required to build an item (bill of materials) and project how much inventory is going to be needed to fulfill the orders (materials requirements planning). You guessed it! A computer will assist with these tasks, and more.

Medical: The most important thing a doctor does is take care of patients—making patient history a critical maintenance item. And most patients have insurance policies to help offset their medical costs. Doctors, and the people who work with doctors, do not enjoy dealing with all of the insurance filing requirements. Many of the new HMO and PPO plans have even more specific requirements for filing claims. Once the payments from the insurer are received, tracking them to the correct claim can be time consuming.

There are many programs available that do an excellent job of maintaining patient history as well as processing insurance claims. Some even have calendaring and scheduling to manage the office hours.

Real estate brokers and developers: If the business is in real estate development, a good job costing system is essential to managing development and tracking profits. Real estate brokers can use automation to track buyers and sellers and put them together. Real estate firms specializing in property management can use software to track properties and leases. Property management software will compute and allocate common area maintenance fees, track expiration dates of leases, escalation and repair fees to specific units or buildings.

Retail: Inventory control is the number one consideration for the retailer. Other areas of automation which work with inventory and offer more control and information include purchasing, order entry and point-of-sale cash registers. Reports from these various systems provide the retailer with sales analysis, inventory turnover, product profitability and a myriad of other reports.

Wholesale Distribution: As is the case in retail and manufacturing operations, inventory control is a pivotal application. Wholesale distributors also need order entry to check stock, provide quotes, generate picking tickets and produce invoices. Like manufacturers, wholesale distributors often "subassemble" various parts to create new products or kits.

Today's computer technology offers automated solutions for virtually every type and size of business. Because of the low cost of microcomputers, even small business owners can computerize their business. For medium and large companies a network of microcomputers can provide an excellent solution.

If you or your company are being burdened by processing paperwork, or are not getting enough management information, you should seriously consider making your next "hire" a computer. Next month we will discuss how to go about selecting business software. ■

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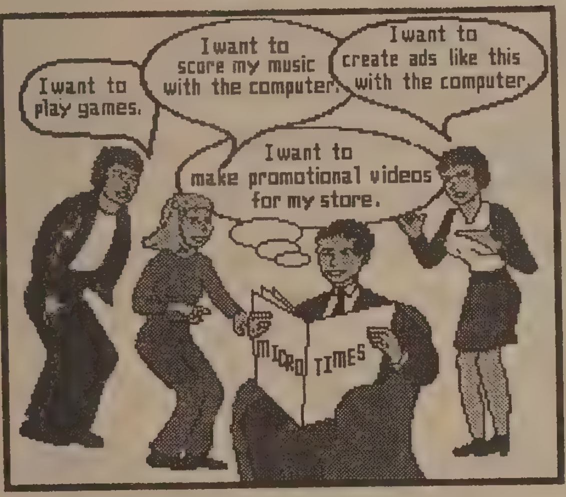
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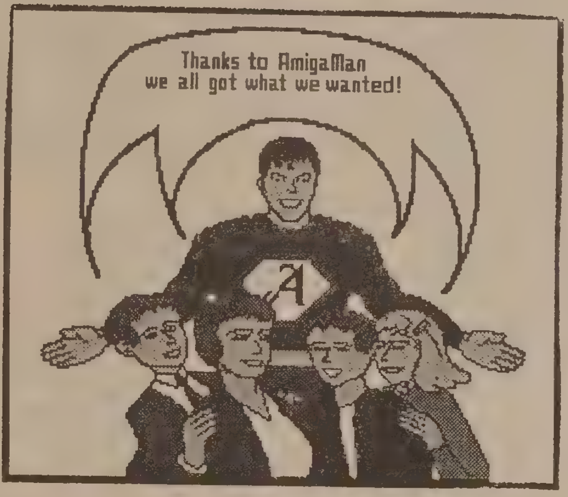
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AMIGA

BY MATTHEW LEEDS

New Amigas—New Products

At COMDEX in November, Commodore announced two new Amigas. The first is the Amiga 2000HD, an Amiga 2000 with the new autoboot hard disk controller and a 40Mb (28 ms) hard disk. The hard disk is formatted and all system software is installed. A re-install floppy is also provided, should the need arise. The 2000HD uses KS/WB 1.3, and the hard disk has the fast file system installed on it. List price is $3,000.

The second Amiga is the Amiga 2500. This essentially is the 2000HD with a Commodore A2620 coprocessor board installed. The A2620 is a 68020/68881 board running at 14.26 MHz with 2Mb of 32 bit RAM (expandable to 4Mb). List price for the package is $4,700.

Current owners of Amiga 2000s should note that there is no real difference between their machines and the new units. A clear upgrade path exists, requiring only the addition of cards and a KS 1.3 ROM chip.

Of far more interest are the technology announcements of not-yet-released products that also occurred at COMDEX. Although many of these products have been discussed in the past, additional details included in the current announcement make for interesting reading. Please keep in mind that none of these technology announcements describe products currently available, and that no pricing information has been released regarding these products.

AMIX™—UNIX™ System V Compatible on the Amiga® 2500 UX

- Fully compatible with AT&T UNIX System V, Release 3.1
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- AMIX includes a special optimizing C compiler with built-in support for the 68020 and the 68881 math co-processor. Other standard development tools include:

cc make lint
sdb yacc terminfo

- Standard utilities and text processing tools include:

email nroff spell pic sh
uucp tbl eqn vi man

This is a bundled system similar to the A2500, but with a larger hard disk and streaming tape drive. Beta test units have been in the hands of developers for about two months by the time you read this. Adding this to Dale Luck's X-Windows system should make the Amiga a very affordable UNIX workstation.

Amiga®2286 Bridgeboard 80286 Multi-processor Card

- The 2286 Bridgeboard is a complete 80286 PC AT on a single card. It runs your MS-DOS applications in the Amiga's multi-tasking environment.
- 8 MHz 80286 processor with 1Mb RAM and 1.2 Mb 5.25" internal disk drive.
- Drives CGA color and MDA mono PC windows simultaneously with Amiga's graphics.
- One AT and two XT expansion slots, 80287 math co-processor socket, Centronics (tm) parallel port.
- JANUS™ system software provides superior resource sharing for custom multi-processor applications.
- Standard Phoenix ROM BIOS and MS-DOS 3.3 for maximum compatibility.
- Fully auto-configuring with auto-boot capability.

JANUS 2.0—Amiga®'s Multi-processor System Software

- Full-featured support for dual-processor applications programming with the new hardware-independent Services System Software.
- Runs IBM-PC AT and XT software on your Amiga 2000 in a multi-tasking environment.
- Supports both the 80286 and 8088 Amiga Bridgeboard and the Amiga Sidecar.

The two most difficult things about owning an Amiga are being patient while Commodore and third party developers get their new products out the door and then coming up with the money to afford them.

- Drives CGA color and MDA mono PC displays simultaneously with Amiga graphics.
- Superior file sharing and transfer capability including extended character set translation with the Aread and Awrite utilities.
- Jlink resource sharing software allows your Bridgeboard PC to treat Amiga hard disk, RAM or floppy disk files as virtual files.
- DJMount software allows your Amiga to use PC hard disks under the V1.3 AmigaDOS Fast Filing System.
- Microsoft mouse support using the Amiga's mouse.
- Autoboot capability and PC boot from any Amiga file.

These two products will resolve the requests for better MS-DOS capability. An AT Bridgeboard and better Janus software should finally make the Amiga capable of running three operating systems at full tilt on a single hardware platform.

Amiga® Transputer Parallel Processing Workstation

- Transputer implementation for Amiga 2000. Compatible with Amiga's multitasking, blitter and DMA access.
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Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics and related fields.

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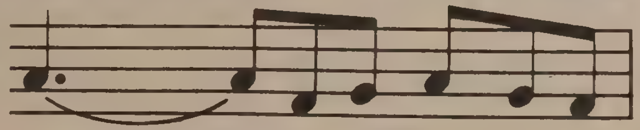

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- Plug compatible with the optional Inmos T800 20 MHz, 32-bit processor and integral floating point math unit with 4K on-chip RAM cache.

If three operating systems are not sufficient for you, this makes a fourth. Keep in mind that all of these are running out of a single box sitting on a desk. I'd love to see someone come up with a tower type case that could hold an Amiga 2000 motherboard and expansion peripherals.

Amiga® PVA 2350 Professional Video Adapter

- The Professional Video Adapter is a real-time frame grabber digitizer and genlock system which allows you to capture and digitize a video image from any source.

- The frame-grabber freezes a single video frame in real-time (1/60th of a second resolution). It captures odd, even or both fields in full color. The captured image can be saved, loaded or modified with the Amiga.

- The genlock syncs an external video source with the Amiga's display hardware allowing you to overlay titles and Amiga graphics onto a video tape or other video source. The combined video signal is output in both RGB and composite formats.

- The digitizer copies your captured video image into the Amiga's memory for image processing applications. All Amiga resolutions are supported including the 4096 color HAM hold-and-modify mode. Color palette is user selectable or computer-optimized. Software provides image-dithering features.

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The High Resolution Color Graphics Card allows the Amiga to render graphics with more colors, resolution and graphics power than previously possible.

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- The Brooktree® BT458 palette chip, provides over 16 million possible colors.

- Direct Memory Access (DMA) capabilities for high speed data transfer and communication between the Amiga and the Graphics Card.

- The industry standard TIGA graphics library provides a library of high speed graphics routines which execute on the TMS34010.

These two should take care of any remaining doubts regarding the Amiga's use in video and graphics. I believe that the two most difficult things about owning an Amiga are being patient while Commodore and third party developers get their new products out the door and coming up with the money to afford them.

Commodore has also started shipping early test versions of the new Extended Chip Set to testers for preliminary shakedown. Still no word on when the new Agnus chip will become available or what support software, if any, will be required to make use of 1Mb of chip RAM correctly. So far it looks like no software will be required other than using SetPatch's -r flag. This will not be the case with the full ECS set as the high resolution modes supported by the new Denise will make use of at least part of AmigaDOS 1.4. Whether the chip set will be released prior to 1.4 and supported, as the Moniterm monitor is, via a RAM/ROM wedge, is still unknown. Stay tuned. ■

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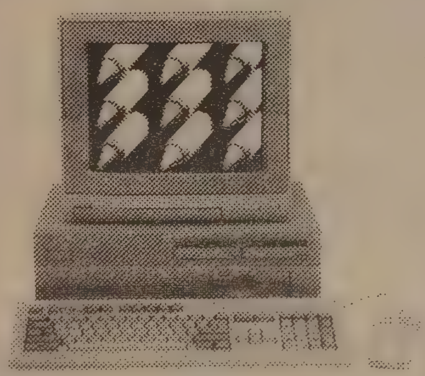

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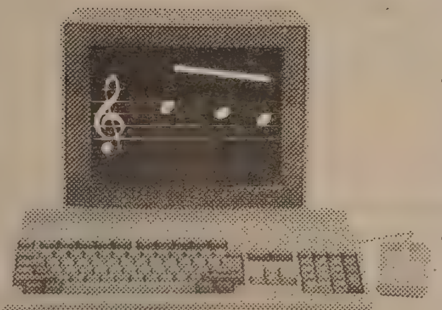

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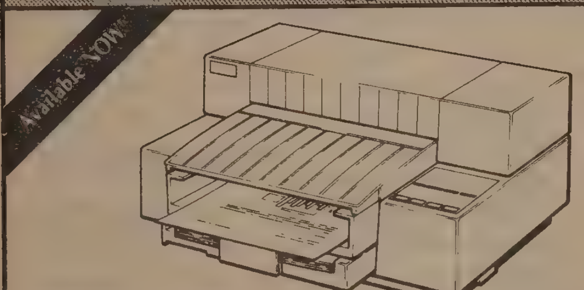
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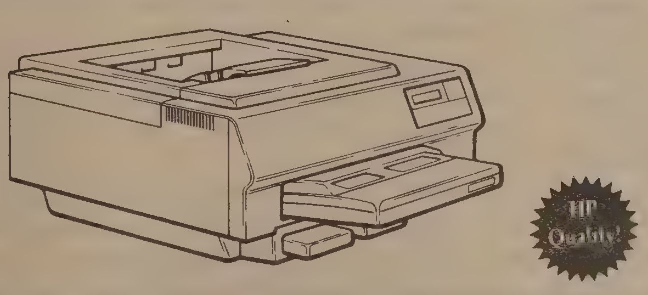

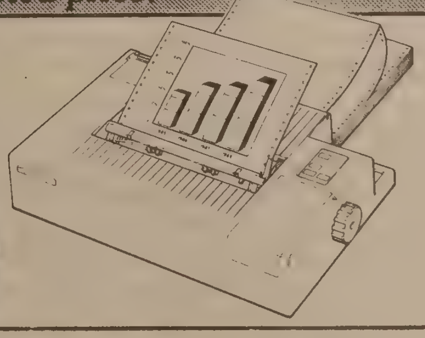

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BY MIKE MARKOWITZ

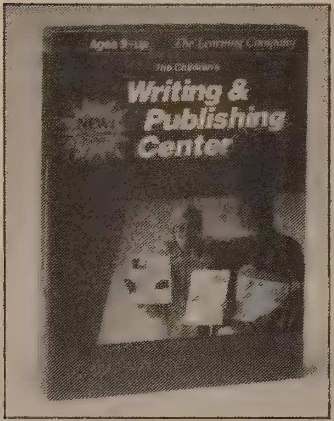
Desktop Publishing For Kids (And Others)

Until quite recently, mixing text and graphics to create a powerful medium of visual communication was the esoteric speciality of graphic designers and pasteup artists. With continuing improvements in the graphic capabilities of personal computers and their attached printers, more and more ordinary people can now experience the insanity-provoking frustrations of page layout.

Even kids.

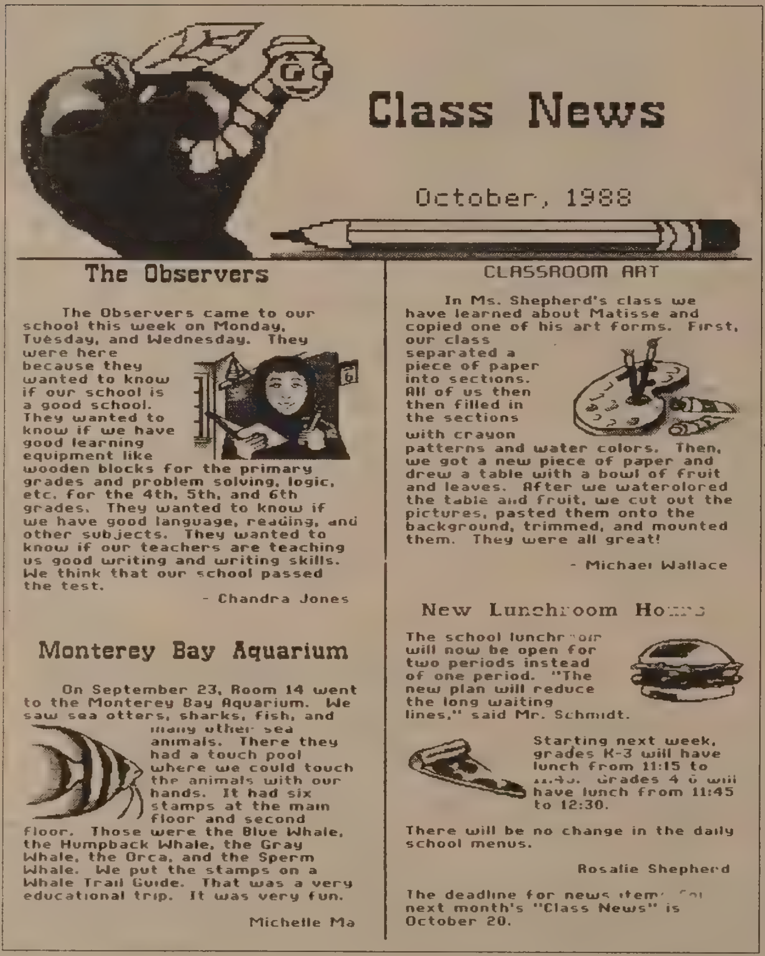
Children's Writing and Publishing Center (CWPC) is the best of a recent crop of graphic page design programs for the classic Apple II. Intended for ages 9 and up, the program should appeal to the legions of teachers who made Brøderbund's *Print Shop* such an educational success. Indeed, *CWPC* can even import *Print Shop* graphics.

What makes *CWPC* so good is simplicity: the wisdom of limitations. At any point in the program, you have only a few options, and they are clearly spelled out. There is a strong temptation for software designers to heap feature upon feature until the code, the microprocessor and the poor user reel and stagger under the burden. Like *Print Shop*, *CWPC* makes it hard for the user to create a truly ugly page. Would that we could say the same about grown-up desktop publishing programs.



The program's menu bar has only five options: Font, Picture, Next, File and Print, each represented by an icon and by name. The user interface is a good compromise between Apple's official guidelines and the limitations of the Apple II series. The program works smoothly with a mouse, the cursor arrow keys, or both simultaneously. Joystick cursor control is not supported.

There are only two basic layouts—single column for "reports, stories or letters" and double column for "newletters." Either layout may be further adorned with a banner headline incorporating a large graphic. Twenty-two of these headline graphics are provided on the program disk, along with 137 small graphics, organized topically as Adventure, Animals, Going Places, Holidays, People, Sports and Things.



Class News

October, 1988

The Observers

The Observers came to our school this week on Monday, Tuesday, and Wednesday. They were here because they wanted to know if our school is a good school. They wanted to know if we have good learning equipment like wooden blocks for the primary grades and problem solving, logic, etc. for the 4th, 5th, and 6th grades. They wanted to know if we have good language, reading, and other subjects. They wanted to know if our teachers are teaching us good writing and writing skills. We think that our school passed the test.

- Chandra Jones

Monterey Bay Aquarium

On September 23, Room 14 went to the Monterey Bay Aquarium. We saw sea otters, sharks, fish, and many other sea animals. There they had a touch pool where we could touch the animals with our hands. It had six stamps at the main floor and second floor. Those were the Blue Whale, the Humpback Whale, the Gray Whale, the Orca, and the Sperm Whale. We put the stamps on a Whale Trail Guide. That was a very educational trip. It was very fun.

Michelle Ma

CLASSROOM ART

In Ms. Shepherd's class we have learned about Matisse and copied one of his art forms. First, our class separated a piece of paper into sections. All of us then then filled in the sections with crayon patterns and water colors. Then, we got a new piece of paper and drew a table with a bowl of fruit and leaves. After we waterolored the table and fruit, we cut out the pictures, pasted them onto the background, trimmed, and mounted them. They were all great!

- Michael Wallace

New Lunchroom Hours

The school lunchroom will now be open for two periods instead of one period. "The new plan will reduce the long waiting lines," said Mr. Schmidt.

Starting next week, grades K-3 will have lunch from 11:15 to 11:45. Grades 4-6 will have lunch from 11:45 to 12:30.

There will be no change in the daily school menus.

Rosalie Shepherd

The deadline for news items for next month's "Class News" is October 20.

What makes CWPC so good is simplicity: the wisdom of limitations. At any point in the program, you have only a few options, and they are clearly spelled out.

The Childrens Writing and Publishing Center brings simple desktop publishing to the classroom. It supports single-or double-column type formats and has a variety of graphics options.

The graphics are printed large (about two inches square) in the single column format, and about one inch square in the double-column format. The larger sizes suffer from the typical jaggies, but the smaller sizes are quite crisp and use color effectively. Color printing is supported on the ImageWriter II, but the graphics, designed in an informal cartoon style, look good in black and white. You cannot modify or edit the graphics, but they can be "flipped" upside down or mirror-imaged.

A picture can only be placed flush with the left or right margin, and the edges of two pictures cannot fall on the same horizontal line. Text automatically flows around the boundaries of a picture.

If you need a customized graphic, you will have to create it with the graphic editor in Brøderbund's *Print Shop Companion*, and then import it. There are several shareware and commercial programs that can translate other Apple II graphics into *Print Shop*-compatible format.

Text can be typed in eight different fonts, each of which has only one size. The two largest fonts, Old English and a serif Roman, are only uppercase. There are only a few word-processor functions: word wrap, a simple cut-and-paste feature and the ability to center lines. The "Workspace" you see on the screen is a true WYSIWYG representation of a portion of your page or column. By pressing open-apple V (for View) you can see a miniature screen representation of four pages at once. This is helpful for visualizing the overall appearance of the document before you print a final copy.

A 120-page User Guide is supplemented by a fold-out quick reference card that defines every command and includes pictures of every graphic.

Mike Markowitz is a computer engineer for a large Southern California aerospace firm. He has been writing about Apple II computing since 1984. You can reach him on AppleLike (MOUSKOWITZ), The Source (SIG 060) or GEnie (M.MARKOWITZ2).

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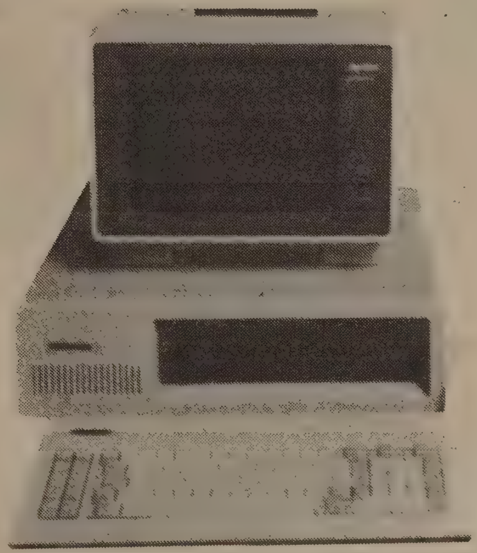

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(Programs listed require a color graphics card.)

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☐ #528 New York Word: This program offers mail merge, test buffering, split screens, and a host of special features $6

☐ #455, #681, #682 PC TYPE+: This processor is from Jim Button's library Easy to use and combines easily with PC-FILE + for mail merge $18

☐ #480 PC Outline: Comparable to ThinkTank. Outline helps you to arrange and re-arrange items by using different categories of classification $6

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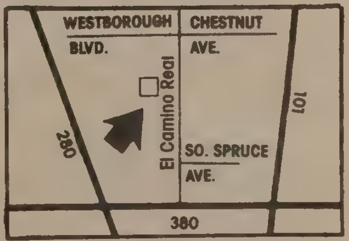

The user guide is oriented toward beginners, but includes a Fast Start chapter for experienced Apple users. The Learning Company has a toll-free customer service number and a reputation for excellent user support.

The best thing about *CWPC* is its speed. This is particularly noticeable on the fast IIGS, but the performance is quite good on a IIc or enhanced IIe. Other page layout programs for the Apple II usually attempt to do too much at once, and pay for it with unacceptably sluggish response. Given our short attention spans, we are usually willing to explore more alternative layouts, to find the best visual presentation, if we don't have to wait several minutes to see the effect of each change.

CWPC uses RDOS, a custom high-speed operating system. You cannot use ordinary ProDOS formatted disks to save your work, but you can format a "storage disk" during a session without losing the document in memory. A formatted storage disk, with a sample letter, is included in the package. The 3.5" disk version of the program can use 5 1/4" disks for document storage—an important feature for many users who only have one drive of each kind.

Apparently the performance secret of *CWPC* is something we want to keep from the Russians, because small print on the package declares: "NOT FOR EXPORT—For the USA and Canada only. This product subject to State Department regulations."

Designed for ages 9 and up, *Children's Writing and Publishing Center* would be quite suitable for a variety of grown-up newsletters, flyers and other light printing tasks. A budding graphic artist may find the limited opitons of this program an impediment to creativity, but the majority of school and home users will be delighted with its speed, convenience and ease of use. An MS-DOS version of the program will be available in early 1989, for unfortunates who bought the wrong computer. (*The Children's Writing and Publishing Center*, $59.95, from The Learning Company, 6493 Kaiser Drive, Fremont, CA 94555. (415) 792-2101.) ■

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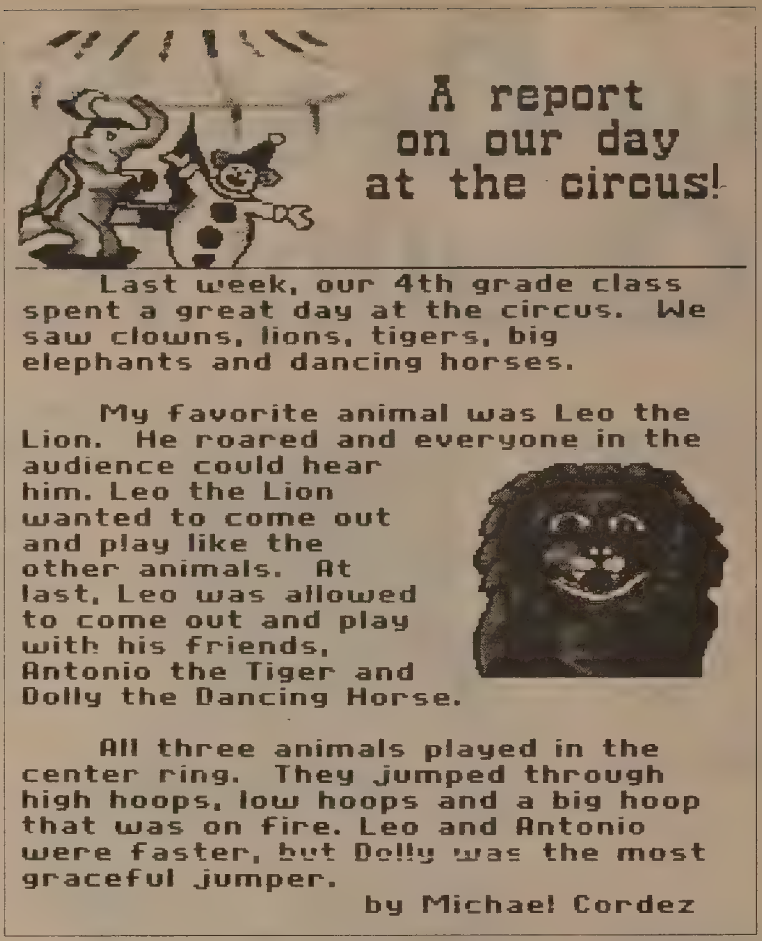

A report on our day at the circus!

Last week, our 4th grade class spent a great day at the circus. We saw clowns, lions, tigers, big elephants and dancing horses.

My favorite animal was Leo the Lion. He roared and everyone in the audience could hear him. Leo the Lion wanted to come out and play like the other animals. At last, Leo was allowed to come out and play with his friends, Antonio the Tiger and Dolly the Dancing Horse.

All three animals played in the center ring. They jumped through high hoops, low hoops and a big hoop that was on fire. Leo and Antonio were faster, but Dolly was the most graceful jumper.

by Michael Cordez

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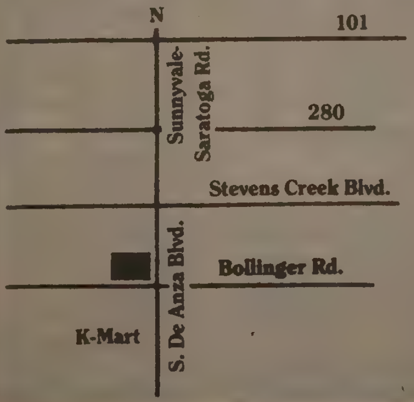

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USER GROUP NETWORK

BY MARY EISENHART

This has been a good month for new club and BBS listings, most of which reflect a growing diversity of applications and interests.

Consider, for instance, the **Ham Radio Computer Packet Group. Bob Fields** tells us that the group was founded to help people learn more about how to use the computer to broadcast messages worldwide and to explore the world of ham radio. Meetings are held monthly at the Salvation Army office in El Sobrante, 4600 Appian Way, at 8 pm on the second Friday of the month. Give Bob a call at (415)237-3761 for more info.

If that's a little too technical for you, you might want to check out **Digi-Dunces Un-Ominous.** The anonymous soul who sent us this listing describes the group as "a meeting ground and exchange for the fat-of-finger, the hopelessly analoguish, and patients of the electrogratification disease. Presently a confederation of various interests and occupations. Keeping one another apprised of relevant events and experiences." If this sounds like the support group you need, send a self-addressed stamped envelope to Box 884334, San Francisco, CA 94188.

Juan Lira writes in to tell us about **The Hispanic Computing Association**, which dispenses Mac- and PC-related information to speakers of Spanish and English. The group meets monthly at DataDesigns/American Music, 2388 Mission in San Francisco, usually on the third Thursday of the month. Juan suggests giving him a call at (415)824-8337 before you head off for the meeting, though, since plans have been known to change. (On a slightly related subject, anybody out there got any suggestions, short of Buy New Software, for a way to make an English-speaking Mac put tildes over the n where they belong?)

Michael Wright of San Francisco writes in to announce the formation of **GMUG**, a new Macintosh user group for the gay and lesbian communities. In addition to the usual user group functions, including meetings, newsletters and software library, it's particularly interested in forming a skills bank to assist nonprofit AIDS/ARC organizations—and the skills don't necessarily have to be Mac-only. Says Michael: "To make the skills bank Mac-only would have a very limiting effect on its usefulness since many of these organizations use PCs. We encourage people with computing skills in all environments to donate their time and talent to the skills bank and assist the groups doing the front line work in the fight against AIDS/ARC. The need ranges from data entry and program specific troubleshooting to systems design and consulting. This is a very real opportunity for the individual computer user to make an immediate difference." Not only that, you don't need to be a GMUG member to offer your services...

If you'd like more information on GMUG, call (415)641-GMUG. And if you'd like to reach the Volunteer Computer Skills Bank, you can write to GMUG, P.O. Box 648, San Francisco, CA 94101-0648 or call (415)864-6305.

On the BBS front, there are some great new ones. One particularly nice development is that **Epyx**, purveyor of great games and entertainment software, has started a customer support BBS. You can reach it at (415)364-0281, 8-N-1, 300/1200. Once there, you can check out a myriad of features, including technical support, warranty and update information, an online catalog, game hints, contests and other cool stuff.

Aaron Ettinger, 15-year-old operator of four bulletin board systems, writes in to encourage us to list "my two best boards": **Open Mind** and **Open Line.** Open Mind runs on an Apple IIe at (408) 923-2113; it operates at 2400 baud, and the content of its 17 sub-boards runs heavily to local gossip and other chatter. Open Line is a multi-user chat system running on an IBM 286 AT Turbo; it also offers several sub-boards in addition to its chat mode. Open Line has two numbers, (408)923-2113 and (408)259-6006. Aaron, known online as Commander Red, also says: "The BBSes both support transfers up to 40 megs' worth. They are also both free." So what are you waiting for? All machine types welcome...

From the usenet, via Lawrence Livermore, the WELL and other interesting points, **Chris Rhodes** of Requin Systems informs us that the moribund **Forum-PC Demonstration BBS** and sysop support line is back with us at (415)487-7639, 300/1200, 8-N-1. Chris explains that the board was originally founded by **Ken Duda**, the author of the Forum-PC software. The board, Chris says, "was taken down a year ago, to the dismay of Forum-PC users. With Ken's departure for MIT, he's handed over distribution and support of Forum-PC to Requin Systems. We've set up a new Forum-PC home base for registered Forum owners and anybody else who would like to call. The BBS also features a variety of programming-related message bases." Should you need to talk to a person instead of a modem, give Chris a call at Requin Systems, (415)579-7451.

Richard Yim, who will be remembered by regular readers of this column as the sysop of the **Family Radio Forum** board, has a new board for your enjoyment: **Compu-Pal**. Its main purpose, says Richard, "is to bring people together by open communication." It offers chat functions, mail, conferences and downloads of software and Bible texts. You can reach Compu-Pal at (415)538-2040, 300/1200/2400, 8-N-1.

Finally, a couple of networking opportunities: **The For Sale By Owners Network BBS** and the **Opportunity Network BBS.** News about the former comes from sysop **Tony Summer**, who explains that everything from houses and real estate to cars and businesses are being bought and sold in fine middleman-eliminating style on his board, which operates 24 hours a day at (408)729-4589, 300/1200/2400. **Opportunity Network**, which charges fees roughly comparable to classified ad rates for its services, offers employers a chance to post openings and prospective employees an opportunity to post their resumes, without all the expense and hassles of dealing with agencies. You can reach this board at (415)673-8040, 300/1200/2400.

Well, that's about it for now. As the year draws to a close, we of the *MicroTimes* persuasion would like to wish you and yours the best of holidays and the happiest of new years. Keep the mail coming: hardcopy to 5951 Canning Street, Oakland, CA 94609; fax to (415)652-4618; email to **microx** on The WELL (415/332-6106) or **{pacbell, hplabs, ucbvax, apple}!well!microx** for usenet.

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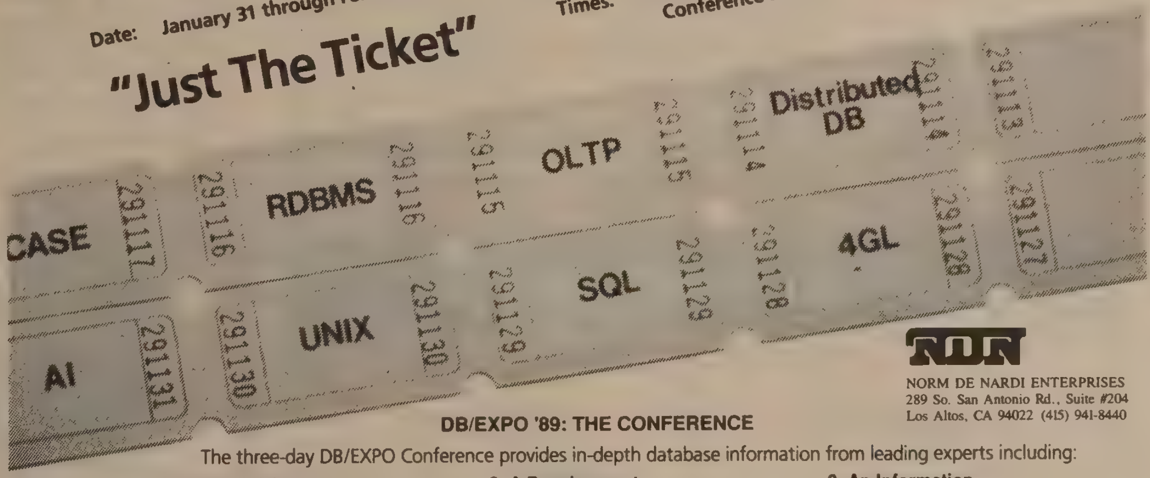

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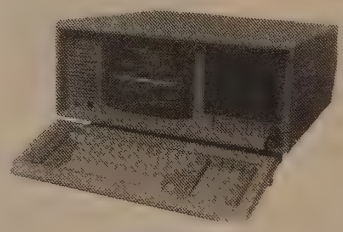

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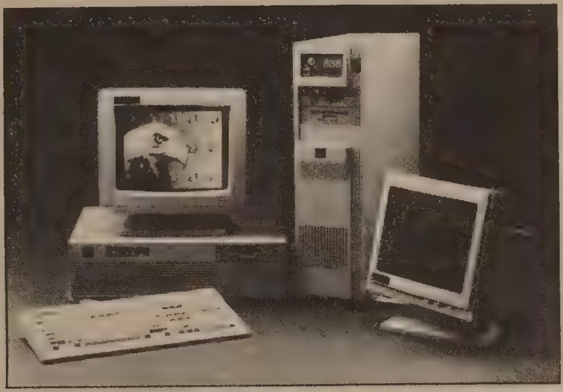

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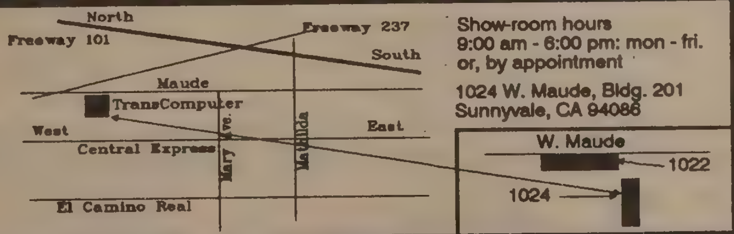

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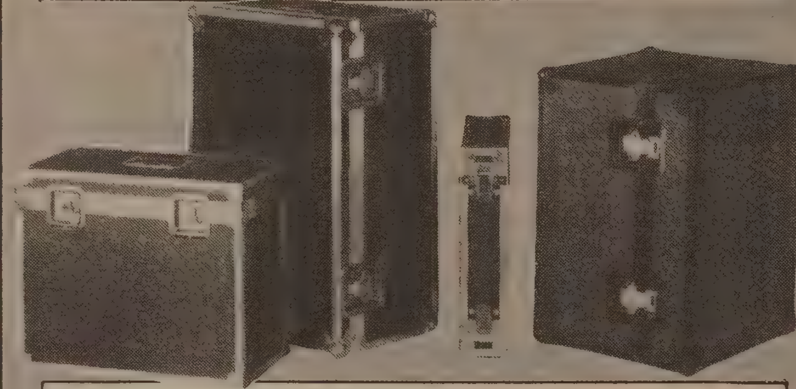

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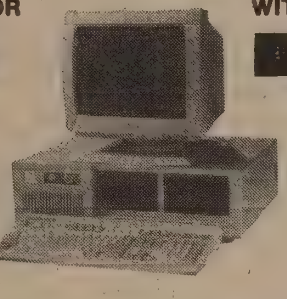

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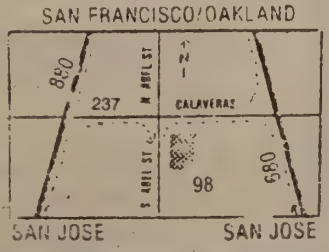

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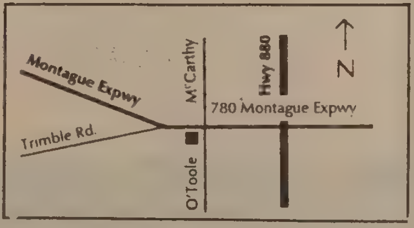

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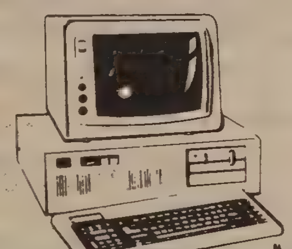

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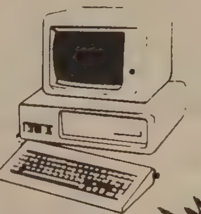

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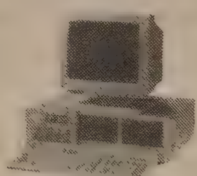

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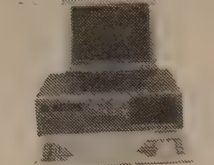

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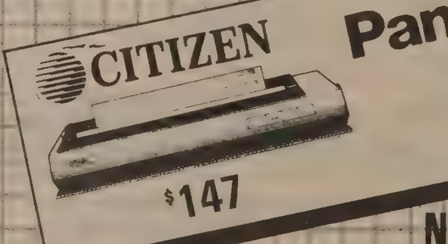

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Association for Women in Computing. Meetings: 1st Wednesday of each month, 6:30 PM, Stagecoach Restaurant, 44 Montgomery St., San Francisco. Call 655-3110 for information.

BAY HPX. Meetings: 2nd Saturday Laptop & handhelds. Call Jim Horn or Michael Felsenstein: (707) 794-3130/(415) 564-8279.

Bay Area CYMA Dealers Association. Meetings: 2nd Tuesdays, Thursdays; 4:30-6:30 pm, San Mateo. Networking and support for McGraw-Hill accounting software consultants and retailers. Call: (415) 345-5955.

Bay Area Desktop Publishing User's Group. Meetings: Tues. 7-9 PM Norman's Restaurant, 2601 College Ave., Berkeley. For more info call Dr. C.J. Wallia at (415) 848-8200.

Baytalk Computer Users Group. Write: PO 369, Berkeley 94701. BBS: (415) 864-6430, 300/1200, 8-N-1.

Business Computerization User Group. Group forming. Write 6938 Buckingham Blvd., Berkeley, CA 94705, or call (415) 848-2080.

California Genealogical Society Computer Interest Group. Meetings: 2nd Sat.- odd months Genealogical Society Library, San Francisco.

COBOL And SQL Users Club Call: Dr. Badshah K. Mian, (415) 337-1787.

Computer Associates Users Group Meetings: 3rd Wednesdays. Gateway Holiday Inn, San Francisco. Call: J.C. Lukrich & Co, (415) 864-6770.

Computers & Law Assoc. Meetings: McGeorge School of Law, 3200 Fifth Ave., Sacramento, CA 95817.

CYMA/McGraw-Hill Users Group Meeting. Meetings: Monday, October 24, 3:00-5:00 pm, McGraw-Hill Publications Building, 425 Battery St., San Francisco. Meet CYMA professionals and learn how to get the most from your software. Call: (415) 839-7466.

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Ham Radio Computer Packet Group. Meetings: 2nd Fridays, 8 pm, Salvation Army, 4600 Appian Way, El Sobrante. Learn how to use your computer to broadcast all over the world with the fascinating world of Ham Radio. Call: Bob Fields, (415) 237-3761.

High Tech Gays. Meetings: 2nd Sundays, Part of the National Gay & Lesbian Task Force. Call: (408) 993-3830.

High Technology Entrepreneurial Council. Meetings: Wednesdays, 6:30 pm, Piedmont Community Center, 711 Highland Ave., Piedmont. HTEC is a nonprofit corporation dedicated to providing software developers and other high tech entrepreneurs a forum for developing marketing strategies, building business relationships and exchanging experience and information. Call: Rachel Munoz, (415) 339-3895

MIDICRUZ Computer and Music Users. Meetings: 1st Thurs., 7:30 PM, 200 Seventh Ave., Suite 225, Santa Cruz, CA 95062. Contact Robert at (408) 476-8464.

MORE: Modemusers Of The Redwood Empire. Meetings: Thurs. July 14; Fri. Aug. 9; 7 PM, Roundtable Pizza, Highway 12 @ Stony Pt. Free membership for modemers who want to get together and talk about local boards. Includes novices to techno-wizards. Call (707) 546-5203.

Mt. Diablo Technology Association. First meeting: Wednesday, Sept. 14. Others monthly at Michael's Restaurant in Walnut Creek. Lunch and evening meetings, send for calendar. Back by popular demand. Will explore common concerns in industry and educational developments. Call: Deborah Scott, (415) 932-4828

Network Users Group (NUG). Next meeting: July 7. Call for location and time. Panel discussion of workgroup software with several major software manufacturers represented. Call (415) 655-6500 for details.

North Bay Users Group (NBUG). Meetings: 2nd Thurs. 7:30-10 PM 201 Maine St., Vallejo, CA. Family Computer Club dedicated to all forms of computing.Determine market opportunities, group research projects. (415) 564-6669.

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PASS: Professional Association of Secratarial Services. Meetings: 2nd Saturdays 11:30 AM, Scott's Seafood, Jack London Square, Oakland.Call: Nina Feldman,(415)655-4296.

PC Publishers Of Northern California. Meetings: 2nd Thursdays, 7 PM, 1415 Valencia St., San Francisco Newsletter, telephone hotline, reference library, education. Support Ventura, PC PageMaker, etc. Intro membership: $$24/yr. Information: Al, (415) 661-9270 or Donna, (415) 826-6640.

Prolog Forum. Meetings: Monthly, 2nd Thursday 7:00 PM, Belmont and various locations. Prolog Forum is a group dedicated to supporting users of the Prolog computer language in artificial intelligence. Call Mark A. Epperson at (415) 594-9981.

ProTel (Professionals In Telecommunications) Meetings: Monthly. Holiday Inn, 1221 Chess Drive, Foster City. ProTel is a network organization for people interested in telecommunications.Leave a message at (415) 227-5637 for information.

SEF Marketing SIG. Meetings: Oct. 27—Telemarketing; Nov. 29—Teknowledge, 1850 Embarcadero, Palo Alto. Call: Don Morrison, (415) 8328-0356

SEF OOP SIG. Meeting: Third Tues. 7 pm, Parc Place Systems, 2400 Geng Rd., Palo Alto. Call: Dean Ritz, (415) 859-1043.

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☐ **CK - CHECKBOOK V3.16 (79)** - Full featured checkbook program. NEW...
☐ **BUSINESS LETTERS (303 & 304)** - (2 disk set) 650 business letters to fit all your needs. Edit w/ any word processor.
☐ **MR. BILL V3.27 (311 & 312)** - (2 disk set) Time & billing package: costs, credits, reports, audit trail, etc. NEW..
☐ **PRO PC-ACCT SYSTEM V3.0 (526)** - Menu driven; fully integrated G/L, A/R, A/P . On-screen help, etc. NEW..
☐ **LANDLORD V2.01 (585)** -Keeps track of rental activity. Menu driven. NEW...
☐ **SLICWORKS V1.0 (321)** - Framework clone. Integrated database, spreadsheet, word processor, & communications.
☐ **IN CONTROL V2.645 (174 & 175)** - (2 disk set) -The ultimate prospect/client/customer & activity tracking system. NEW
☐ **MANAGEMENT TOOLS (643)** - 10 programs for mgmt. & supervisors - a mini-mgmt. course. NEW...
☐ **FINANCE MANAGER V4.0 (77)** - Accounting package for business or personal finances. Double entry system.
☐ **FAST BUCKS V3.1 (191)** - Menu driven home finance package.

COMMUNICATIONS

☐ **RBBS BULLETIN BOARD V16.1A (613 - 616)** - (4 disk set) Turn your computer into a RBBS. Industry standard. NEW..
☐ **QMODEM V3.1 (293 & 294)** - (2 disk set) Full featured modem program.
☐ **PROCOMM PLUS TEST DRIVE V1.1 (504)** - Menu driven modem program; still one of the best. NEW...
☐ **BOYAN VDS - (467)** - Modem program that has received great reviews by all.

DATABASE

☐ **FILE EXPRESS V4.22 (33 & 34)** - (2 disk set) Menu driven database; report generator, many features. NEW..
☐ **WAMPUM V3.2B (37 & 38)** - (2 disk set) Menu driven dBase III clone. Knowledge of dBase suggested. NEW...
☐ **PC-FILE + V2.0 (493 - 495)**- (3 disk set) Full-featured database; help screens, menus, macros. One of the best.
☐ **dGENERATE V1.0 (511)** - Screen & source code generator by Tom Rettig. dBase III required.

EDUCATION

☐ **COMPOSER (3)** - Create, save, edit, play, & print your music. CGA required.
☐ **LETTERFALL V1.1 (119)** - Improve your touch typing skills; 16 levels.
☐ **BEGINNING SPANISH (121)** - Teaches vocabulary, phrases, etc. Basic required.
☐ **THE WORLD 3D (127)** - Display maps of the world. CGA required.
☐ **FUNNELS & BUCKETS V 2.0 (130)** - Great learning game; add, subtract, multiply, & divide. Ages 5 - 10.
☐ **ERYN'S ABC'S (131)** - Teaches alphabet & numbers. Computerized Etch-a-Sketch. Ages 2 - 6. Basic required.
☐ **MATH-WHIZ (188)** - Teaches various math operations. Ages 5 and up. You choose the level. Basic required.
☐ **AMY'S FIRST PRIMER (133)**- Alphabet, numbers, counting, shapes, matching, etc. Ages 4 - 8. CGA & Basic req.
☐ **PLAY 'N LEARN V2.01 (624)** - Contains 7 games designed for kids up to 4 years old. CGA required.
☐ **SPELLING BEE (138)** - Grades 1 - 12. CGA & Basic required.
☐ **ALGEBRA TUTOR (577)** - Teaches various operations of algebra. NEW...
☐ **ANIMAL MATH/MOSAIC (181)** - Count objects & graphic learning tool. Ages 4 & up . CGA required.

EGA / VGA PROGRAMS

☐ **EGA RISK (216)** - The game of world domination. Superb graphics.
☐ **EGA UTILITIES/1 (260)** - EGA demos, change fonts, palette setting, etc.
☐ **ALDO'S ADVENTURE (605)** - Graphic advneture game. Watch out for those falling barrels... NEW...
☐ **VGA CAD V1.4 (584)** - A painting/graphics editor/CAD program. NEW...

GAMES

☐ **SLEUTH V4.1 (89)** - Murder mystery game similar to the board game "CLUE".
☐ **BLACKJACK (95)** - Advanced blackjack game with tutor, multiple players. Best one yet. CGA or Hercules.
☐ **MONOPOLY V6.7 (106)** - Just like the board game, 2 to 4 players. CGA req.
☐ **DND V1.1 (205)** The Classic Game. Inspired by Dungeons & Dragons. CGA req.
☐ **LAS VEGAS (116)** - Craps, Roullete, Poker, & more. CGA req., Basic on some.
☐ **3D CHESS V1.01 (215)** - Excellent chess game. Switch between 2D & 3D.
☐ **SAM SPADE V1.0A (226)** - Great detective game. CGA required.
☐ **SOLITAIRE (211)** - 4 different games. Nice graphics. CGA required.
☐ **SUPER PINBALL (212)** - 5 different games. CGA required.
☐ **WORDPLAY (367)** - Wheel of Fortune clone. You provide the prizes. CGA req.
☐ **HANGMAN (91]** - 2 versions of the ever popular game & learning tool. CGA req.
☐ **DIGITAL LEAGUE BASEBALL (344)** - Pick your team & players. CGA required.
☐ **MINIATURE GOLF (505)** - 18 hole golf course with graphics. CGA required.

GRAPHICS

☐ **FINGERPAINT V2.0 (282)** - Paint program, easy to use. NEW..
☐ **PRINTSHOP GRAPHICS / 1 (320)** - 3 more libraries of graphics for Printshop.Requires Printshop.
☐ **PRINTMASTER GRAPHICS / 1 (319)** - 3 libraries of graphics for Printmaster Plus. Requires Printmaster Plus.
☐ **PRINTMASTER GRAPHICS / 2 (549)** - Over 150 graphics for Printmaster Plus.
☐ **PRINTMASTER GRAPHICS / 3 (550)** - Over 150 graphics for Printmaster Plus.
☐ **PC-KEY-DRAW V3.33 (534-536)** - (3 disk set) - Combines features of a CAD & paint program for power/flexibility. NEW
☐ **DANCAD 3D V2.0E (424 & 425)** - (2 disk set) Advanced 2D/3D drafting program. Stereoscopic 3D wire frame animation. 512k req. NEW...
☐ **CITY DESK V6.0 (197)** - Desktop publisher with graphics capability.

LANGUAGE

☐ **TURBO "C" TUTOR (489 & 490)** - (2 disk set) 14 lesson tutorial ; learn to program in "C" language.
☐ **"C" LANGUAGE V2.1 (299 & 300)** - (2 disk set) Complete programming environment. Source, compiler, samples.

NOVELTY

☐ **STRESS & SHRINK (74)** - Stress - stress test. Shrink - personality analysis.
☐ **HORSERACING (343)** - Handicapping for thoroughbreds.
☐ **FAMILY TIES V1.15 (154)** - A genealogy program for the amateur or pro.
☐ **ASTROLOGY V9.5 (284)** - Read your own chart from stars, moon, etc.
☐ **LOTTO # GENERATOR (159)** - Win big $$$. Current data thru August. NEW...
☐ **FREEWILL V1.0 (171)** - Valid WILLS for California. Easy to fill in.
☐ **G.I.F.T.S. (618)** - Gift ideas for any occasion; Christmas is coming... NEW...
☐ **BIORHYTHM (194)** - Calculate & print your own monthly charts.
☐ **TENANTS RIGHTS (196)** - The 'Bible' for California renters. **A MUST.**
☐ **PC-BARTENDER (619)** - Recipes for approx. 200 drinks. Search by drink, ingredients, adjust sizes, etc. NEW...
☐ **WEIGHT CONTROL (586)** - Get rid of those unwanted inches / lbs. NEW...
☐ **AIRPLANES (398)** - Print paper airplanes, fold-em and let 'em fly. Basic req.
☐ **EDNA'S COOKBOOK (566)** - Record, file, list, & print your recipes. NEW...

PRINTER UTILITIES

☐ **LQ V2.26 (509)** - Produces high quality text on dot matrix printers. Multiple fonts with print spooler. NEW...
☐ **LASERJET FONTS/I (327)** - 30 + downloadable fonts for Laserjet Plus/II.
☐ **LASERJET FONTS / II (471 & 472)** - (2 disk set) More downloadable fonts for HP Laserjet Plus/II. Helvetica, Script, etc.
☐ **ON-SIDE (560)** - A sideways printing program with multiple fonts. NEW...

SPREADSHEET

☐ **PC CALC + V1.0 (537-539)** - (3 disk set) Complete Spreadsheet program. NEW.
☐ **GOAL SEEKER (558)** - Define your "goal" & the program will do the necessary calculations. Great... NEW...
☐ **LOTUS 123 TUTOR (177)** - Beginning tutorial for Lotus 123. Various worksheets. Requires Lotus 123.
☐ **AS EASY AS V3.0 (302)** - Lotus clone. 52 column sheet, graphing, supports functions of 123, "WK1" files, etc.

UTILITIES

☐ **DISK COMMANDO V2.0 (218 & 219)** - (2 disk set) Norton Advanced Utilities clone. Too many features .
☐ **SIM-CGA (220)** - Great for most programs that need color (CGA) to run.
☐ **DOS HELP FOR VER 3.3 (255)** - Help screen for DOS commands. NEW...
☐ **DOS TUTORIAL V4.4 (256)** - Menu driven tutorial that teaches DOS commands, terms, etc. A MUST. NEW...
☐ **BEGINNERS (257)** - The basics of using most public domain/shareware software. ☐ **LIST V6.2A (274)** - Best utility for viewing documentation or any ASCII file.
☐ **POWERMENU V3.1 (419)** - Menu program for your hard drive. Excellent.
☐ **PC-DESKTEAM V1.03 (278)** - Sidekick like utility plus more features.
☐ **AUTOMENU V4.01 (280)** - Excellent menu program for your hard drive.
☐ **VACCINE / FLU-SHOT (541)** - Various programs to protect againt "trojan horses" & the "virus". NEW...
☐ **HOMEBASE V2.5 (528-530)** - (3 disk set) - Great desktop organizer; editor/word processor, cut & paste, calendar/appt. book, & many more. NEW..

WORD PROCESSING

☐ **MASS APPEAL V3.0 (630)** - The ultimate mailing list manager... NEW...
☐ **PC-WRITE V2.71 (9 & 10)** - (2 disk set) Full featured word processor; all the features of the expensive one's.
☐ **LETTERHEAD (69)** - Create and print your own letterhead on letters and envelopes. IBM/Epson comp. printer req.
☐ **GALAXY V2.3 [11)** - Easy to use word processor; menus & quick keyboard commands. Lots of features.
☐ **PC-OUTLINE V3.34 [7)** - Windowing outline editor / thought organizer. Does main topics / subtopics, etc. NEW...
☐ **WORDPERFECT MACROS FOR V5.0 [189)** - Contains over 80 macros. NEW...
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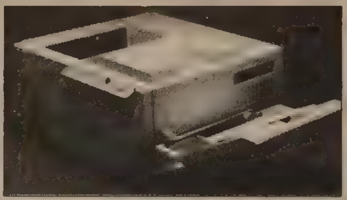

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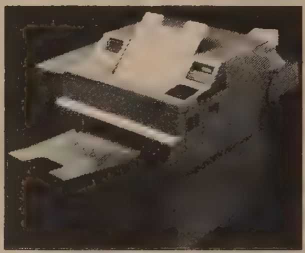

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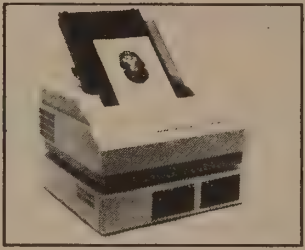

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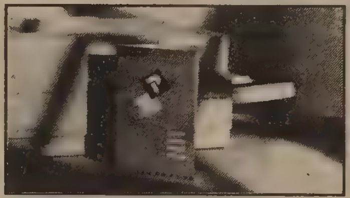

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Silicon Valley Techno—Musicians Network. Computers, MIDI, electronic/computer music, home studios, all experience levels, all computers, all musical styles welcome. Call: Bob, (408) 733-3429.

Software Entrepreneur's Forum (SEF). Meetings: 3rd Thurs. 1875 Embarcadero Rd., Palo Alto. Helps individual software developers and startup software companies. Call for complimentary newsletter. (415) 854-7219.

Technology Executive Roundtable (TER) Meetings: Fourth Tuesdays, 6:00 pm, Santa Clara.Call: Jenny Hoyt,(408)997-1826.

The Society For Technical Communication. Meetings: 1st Wed. 7:00 PM Room #3, SMUD Facilities, corner of Elkhorn and Don Julio, Sacramento. Devoted to the advancement of the theory and practice of technical communication.

Valley of the Moon Users Group. Meetings: 2nd Saturdays monthly, 10:00 AM, Moose Lodge, Sonoma. All systems welcome. BBS, 300 BAUD, 24 hours, (707) 996-7922.

Women's Special Interest Group. 7:30 pm, Hewlett-Packard, 5301 Stevens Creek Blvd., Santa Clara. For all women interested in computing. Call: Rita Zokaei, (415) 574-8225

USER GROUPS

AMIGA

ACCESS (The Amiga And Commodore Computer Enthusiasts Society). Meetings: 3rd Tues. 7:30 PM Community Room of Homestead Savings & Loan, 999 E. Stanley Blvd., Livermore, CA. Contact Ron Kremkow at (415) 449-1784.

Amiga Addicts Anonymous. Meetings: Newsletter, public domain library, demonstrations. Write PO 4669, Walnut Creek, CA 94596. Call: 689-3453

Amiga East Bay Info Exchange (AEBIE). Meetings: 2nd Tues. 7 to 9 PM 11185 San Pablo Ave., in El Cerrito. Write to P.O. Box 485, Pinole, CA 94564.

ASCITEC: The Amiga Science & Technology Users Group. Meetings: 2nd Thurs. 5-7 PM Lockheed, B/157, Rm. 4-C, Sunnyvale, CA. Scientific/Video Applications. Classes available.

AUGment - Amiga Users Group of Silicon Valley. Meetings: 2nd Fri. Write to P.O. Box 1863, Fremont CA 94538 for more info.

Bay Area Amiga Developers Group (BADGE). Meetings: 3rd Thurs. 8 PM Turing Auditorium, Stanford University, Stanford, CA. For all Amiga programmers. No membership fee.

CWEST Bay Area Commodore Users Group. Meetings: Third Thursdays, 7:00 PM, Embarcadero YMCA, between Mission & Howard. Support C-64/128 and Amiga. New Users welcome. Write PO 146731, San Francisco, CA 94114-6731.

Northern California Amiga Club. Meetings: Second Saturdays, 2 pm, Rico's. Supports Amiga. Write: PO 54, Bella Vista, CA 96008.

SMAUG (Salinas-Monterey Amiga Users Group). Meetings: 3rd Tues. at 7 PM, Seaside Library, 550 Harcourt Ave., Seaside, CA. Write PO 776, Castroville, CA 95012 for call Richard Binsacca at (408) 678-2518.

SVAUG-Scotts Valley Amiga Users Group. Meetings: 2nd Thursday, 7:00 PM. The Computer Room, Kings Village, Scotts Valley.

Vallejo AMiga People (VAMP). Meetings: 2nd Tues. 6:30 PM Software 1st, Vallejo Corners Shopping Center. Contact Bill Braun at (707) 554-0263.

AMSTRAD

North American Amstrad Users Group (NAAUG). National User group. For info send S.A.S.E. to NAAUG, P.O. Box 2178, Ferndale, WA 98240.

APL

APL Bay Area Users' Group. Meetings: 2nd Monday, 6:30 PM, I.P. Associates, 425 Sherman Ave., Suite 200, Palo Alto.

APPLE

A.P.P.L.E. Co-op. Meetings: National User Group. Call-A.P.P.L.E. Magazine. Write: 290 S.W. 43rd Street, Renton, WA 98055. Or call (206) 251-5222 for more info.

Apple Pickers of the Redwood Empire. Meetings: 2nd Sat. 10 AM Santa Rosa JC, Shuhaw Hall, Rm. 1735. Call for sample newsletter. (707) 763-8322.

B.E.A.R. Apple II National Users Group. Meetings: send S.A.S.E. to B.E.A.R., 4719 Meridean Ave. #401,San Jose 95118. Printshop & Appleworks files, monthly newsletter.

Diablo Valley Apple Users. Meetings: 1st & 3rd Fri. 7 PM Willow Creek Ctr., 1026 Mohr Lane, Concord, CA. SIG's meet monthly. Featuring library of pub. domain software & club's DOM's. Newsletter, demos, group buys hard/software.

GravenStein Apple IIGS Users Group. Meetings: 3rd Saturdays, 10:00 AM, Coddingtown Mall, Santa Rosa. User group to explore new and existing programs and uses for the IIGS, to order equipment and material as a group for quantity discounts and to encourage the use and development of the IIGS among current, new and potential users. Call: Aaron Lamar, president, 938-8479.

San Francisco Apple Core. Meetings: 3rd Saturdays, 10 am, Daly City Library, 40 Wembley. BBS, SIGS, PD/SW library, Help List, Newsletter, more. Call: 398-2335/771-5830.

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San Leandro Apple User Group. Meetings: 1st Thursdays, San Leandro HS, Rm. 213. New owners to experienced users welcome. AppleWorks, software and telecommunications SIGs meet monthly. Call: (415) 483-6046.

Tri Valley Apple II Users Group. Meetings: 1st Thurs. 6:30 PM. Call Esther Farnstrom at (415) 829-3672 or Dan Balsey at (415) 828-6237 for meeting location.

ATARI

Bay Area Atari Users Group (BAAUG). Meetings: 1st Mon. 7:00 PM Bracher School, corner of Bowers and Chromite, Santa Clara. ST users meet at Bracher on 2nd Tuesdays. 8-bit users meet at H-P, Wolf and Pruneridge, Cupertino. BBS: (408) 247-1257.

COAST (California Original Atari ST Users Group). Meetings: 3rd Wednesdays, 7 pm, 2105 Bancroft, Berkeley. Call: (415) 945-1949.

AT&T

Bay Area AT&T PC Users Group - South Bay. Meetings: 2nd Wed. 6:30 PM AT&T Bldg., 1090 E. Duane, Sunnyvale, CA. Call: Joe Lipsig (408) 733-6522. BBS: (408) 462-6329.

Bay Area AT&T PC Users Group. Meetings: 1st Wed. 6:30 PM Alternates between Oak. & SF, Call: Joe Mahoney (415) 586-8376. BBS: (415) 829-6027.

AUTOCAD

San Francisco/Marin AutoCAD Users Group. Meetings: 2nd Tuesday evenings. $20 annual membership fee & newsletter. For further info, call Volker, 331-9466, or Virginia 777-4025.

Sonoma County AutoCAD Users Group. Call (415) 777-9144 for info.

BLIND USERS GROUP

International Blind Users Group (I-BUG). As a member you will receive 6 issues of Compu-Help-On-Disk as well as your own ID and password to CompuHelp. $20/yr. Call: (916) 783-0364.

COMMODORE

ACCESS (The Amiga And Commodore Computer Enthusiasts Society). Meetings: 3rd Tues. 7:30 PM Community Room of Homestead Savings & Loan, 999 E. Stanley Blvd., Livermore, CA. Contact Ron Kremkow at (415) 449-1784.

Campbell Chapter of 64/More Commodore UG. Meetings: 4th Tues. BBS (408) 946-6154.

Commodore 64 Software Users Group For New Commodore Owners. One-on-one help for new owners. Meeting place & time TBA by members. Call (714) 531-2977 for info.

Commodore Connection Users Group. BBS (415) 458-1005.

Cupertino Chapter of 64/More Commodore UG. Meetings: 3rd. Sat.BBS (408) 946-6154.

CWEST Bay Area Commodore User Group. Meetings: 3rd Thurs. Embarcadero YMCA, between Mission and Howard. Supports C-64/128, Amiga. Write P.O. Box 146731, San Francisco, CA 94114-6731.

Diablo Valley CUG. Meetings: 2nd Thurs. 7:30 1331 Concord Ave. For info write: Box 27155, Concord, CA 94527. Or call (415) 932-2413.

F.U.N.H.U.G. - Fremont, Union City, Newark, Hayward User Group. Meetings: 3rd Thurs. 7:30 PM Newark Public Library, 6300 Civic Terrace Ave., Newark, CA. A user-organized, user-operated user group not affiliated with any computer or software manufacturer or distributer.

Fairfield Commodore User Group. Meetings: 1st & 3rd Mon. Solano County Education Bldg. Write to P.O. Box 2778, Fairfield, CA 94533-9998 for info.

Marin Commodore Users Group. Meetings: 2nd Wednesdays, Redwood High. Call: 883-7748; BBS 883-2558—300/1200.

Mother Lode Commodore Users Group. Meetings: 2nd & 3rd Thursdays, 7:00 PM, Calaveras County Water District Board Room. Supports the Commodore PET, VIC, 64, Plus/4 C-16 & 128. Call: Larry Anderson, 754-5530.

North Valley Chapter of 64/More Commodore UG. Meetings: 2nd. Sat. BBS (408) 946-6154.

PLUG (The Plus/4 Users Group). No regular meetings. Over 800 members internationally. Write to P.O. Box 1001, Monterey, CA 93942 for info.

San Jose Chapter of 64/More Commodore UG. Meetings: 1st. Sun. BBS (408) 946-6154.

San Leandro Computer Club. Meetings: 1st Tuesdays, 8 pm, San Leandro Community Library. BBS's: (415) 352-5528 & 782-4402.

Silicon Valley Commodore Club. Meetings: 4th Wed. 7 PM Hewlett-Packard, 5301 Stevens Creek at Lawrence & 280. C-64, C-128, & Amiga.

dBASE

dBASE Users Group of Marin & Northbay. Meetings: monthly, call (415) 488-0342 for info. Open membership, beginners through developers.

dbDVLPRS. Meetings: 2240 Buchanan, Ste. 5, San Francisco. Includes dBASE II, III, VI, Clipper, Foxbase, dBXL, Quicksilver and others. Call: Bruce Leandro, (415) 923-0659.

DATAEASE

Bay Area DataEase Users Group. Meetings alternate between San Francisco and Palo Alto. Contact Kermit Carter at (415) 945-7817 for info.

DYNABYTE

Dynabyte - Tahoe City Dynabyte Users Group. Swap, buy/sell - boards, parts, units. Write to Drawer 2629, Olympic Valley, CA 95730 for info.

EAGLE

Eagle Computer Users Group. Meetings: 2nd Sat. 9:30-12 noon Tandem Computer H.R. Training Rm., N. Tantau Ave., Cupertino.

EASYTRIEVE

Easytrieve Plus Users Group. Next meeting: June 14, Hyatt Oakland. Call Debbie at Pansophic, (415) 573-7100. All users welcome.

EPSON

Epson Users of San Francisco Bay Area. Meetings: 1st Thurs. 7-10 PM Fort Mason, Bldg. C, Rm. 216, San Francisco, CA. For users of Epson (QX, Equity, PX-8). Presentations, support network, newsletter, public domain software.

FIRST PUBLISHER

First Publisher User Group. Members make up 8 1/2 x11 formats for newsletters & tip sheets. $35 annual membership. Contact Raul Ibanez (415) 550-0785.

FORTH

Forth Interest Group of Silicon Valley. Meetings: 4th Sat. 1 PM Oak Room, at Hewlett Packard, on Pruneridge in Cupertino. Call George Shaw at (415) 276-5953 for info.

Forth Interest Group, North Bay Chapter. Meetings: 2nd Sat. 1 to 5 PM South Berkeley Community Library, corner of Russell and Martin Luther King Junior Way. One block north of Ashby BART station. Contact George Shaw (415) 276-5953.

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FoxBase+ User Group. PO 20607 Oakland, CA 94620. New group now forming. Call Rachel Cohen, (415) 465-3570.

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Gavilan User Group. Meetings: 2nd Thurs. 7 PM Lockheed Bldg. 162. Cal (408) 379-2774 for info.

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Bay Area Heath User Group (BAHUG). Meetings: 2nd Tuesdays, 7 pm, 2001 Middlefield Rd., Redwood City. Call: Ed Hayes, (415) 326-3311.

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HyperCard SIG/GMUG. Meetings: 2nd Wednesdays, 7 pm, 78 A Mars St., San Francisco. Call: 641-GMUG.

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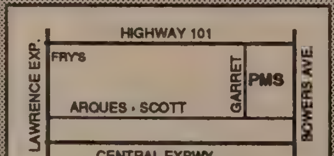

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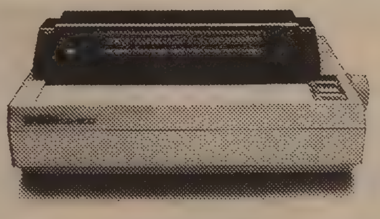

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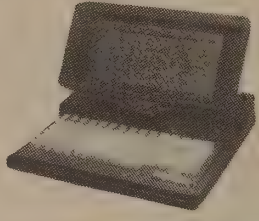

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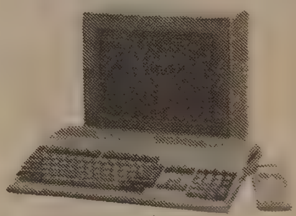

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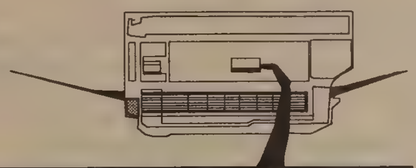

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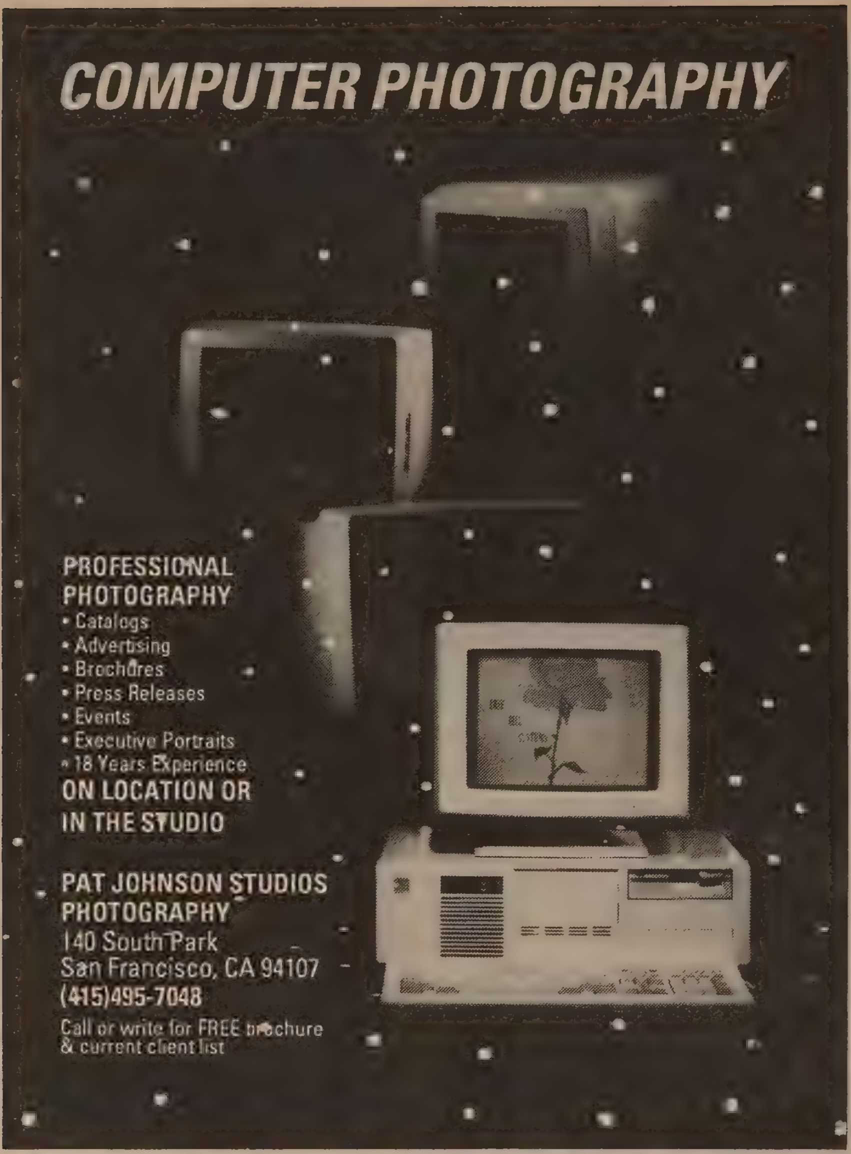

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Silicon Valley FOG. Meetings: 3rd. Wed. 7:30 PM Saratoga Community Library, 13650 Saratoga Ave.

Solano Community PC Users Group. Meetings: 3rd Monday, 7 PM, Fairfield High School.

Solomon User Group Of Silicon Valley. Meetings: Wednesday, August 10, 6:30 PM, Conveyor And Storage Dynamics, 2581 Leghorn St., Mt. View. Call Grihalva Associates, 39899 Balentine Dr., Suite 175, Newark, CA 94560; (415) 659-1515.

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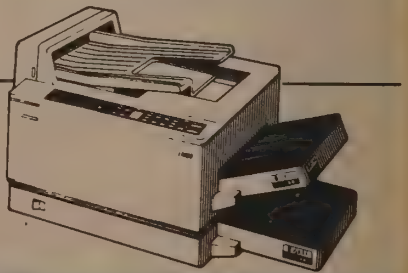

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Berkeley Macintosh User Group (BMUG). Meetings: every Thurs. 6 PM Physical Sciences Lecture Hall, UC Berkeley Campus. SIG meetings on Mondays, Tuesdays & Wednesdays. Call for this week's topic. (415) 849-9114. BMUG, 1442A Walnut St., #62, Berkeley, CA 94709.

Christian Macintosh User Group, San Francisco Chapter. Meetings: 2nd Thurs. San Francisco. Newsletter and support available. Contact Rick Thrasher at (408) 437-1913. Bible Study and DTP SIGS.

Christian Macintosh User Group, Silicon Valley Chapter. Meetings: 1st Thurs. San Jose. Newsletter and support available. Contact Rick Thrasher at (408) 437-1913.

Desktop Publishing SIG/ GMUG. Meetings: 1st Tuesdays, 7 pm, San Francisco Business Times Building, 325 Fifth St., San Francisco. Call: 641-GMUG

Diablo Valley Apple Users. Meetings: 1st & 3rd Fri. 7 PM Willow Creek Ctr., 1026 Mohr Lane, Concord, CA. SIG's meet monthly. Featuring library of pub. domain software & club's DOM's. Newsletter, demos, group buys hard/software.

EBMUG (East Bay Macintosh Users Group). Meetings: 3rd Tuesdays, 7:30 pm, 724 Allston Way (@4th) near University Ave., Berkeley. Members receive free PD software. Bring blank disk. Meetings open to everyone. Call: Terry Pennington, (415) 486-0147.

GMUG (San Francisco's Macintosh User Group for Gays and Lesbians). Meetings: 3rd Wednesdays, 7 pm, UC-Berkeley Extension Annex, 1930 Market St., Rm., #2G. Call: 641-GMUG

HyperCard SIG/GMUG. Meetings: 7 pm, 78 A Mars St., San Francisco. Call: 641-GMUG

Mac Diablo Users Group (MDUG). Meetings: 3rd Tues., Community Room, Glendale Federal Savings, 3101 Crow Canyon Road, San Ramon.

MacCruisers — Santa Cruz. Meetings: 2nd Wed. Jade Street Community Ctr. at 45th Ave., Capitola, CA.

Macintosh SIG/SEF. Apple Cafeteria. Call for dates and time. Tony Meadow, 644-9400.

MacNexus — Sacramento's Macintosh Users Group. Meetings: 3rd Thurs. 6:30 PM Call (916) 446-2411 for info. 350 members, but still informal. Extensive public domain collection.

Macs Of Marin (MOM). Meetings: 2nd Thursdays, 7 pm, Redwood High School, 395 Doherty, Larkspur. Call: Steve Salzman, 459-5707.

Silicon Valley Computer Society's Macintosh SIG. First meeting: September 21, 7:30 pm, 6th floor offices of Arthur Young and Co., Mitsubishi/Plaza Bank Building, 55 Almaden Blvd., San Jose. A forum for shared ideas. First meeting will be a demonstration of HyperCard. Other demos are planned for future meetings. Call: Dennis Dawson, (408) 947-5550.

Stanford Macintosh Users' Group (SMUG). Stanford community membership: $25; public membership: $35 per year. Call: 723-SMUG. BBS: (415) 723-7685.

TI-West Meetings: 2nd Fri. 8 PM Chabot College, Rm. 600, 25555 Hesperian Blvd., Hayward, CA. Access to a variety of pub. domain software, education modules "problem solving" peripheral committee.

Tri-Valley Macintosh User's Group (TMUG). Meetings: 1st Thursdays, 7 pm, 4695 Chabot Dr., Rm 114, Hacienda Business Park, Pleasanton. Newsletter, large P/D library. Call: James (415) 426-8756 eves, Mike, (415) 838-6165.

MICROSOFT

Mac Diablo Users Group (MDUG). Meetings: 3rd Tuesday, 7:30 PM, Community Room, Glendale Federal Savings, 3101 E. Crow Canyon Rd., San Ramon. Small, helpful group.

Microsoft Word Users Group. Meetings: 4th Mondays, 7:30 PM - 9:30 PM, Hewlett Packard-Cupertino-Oak Room Bldg., 48 Pruneridge, 100 yds. est of Wolfe off Hwy 280. August 22: Chris Donner, Pres. Access Softek on DRAGNET for Text Retrieval and Management. Call: Bill West, 356-8805.

Mirosoft Word SIG of the SVCS. Meetings: 4th Mon. 7:30 PM Hewlett—Packard, Oak Room, Pruneridge at Wolfe, Cupertino. Contact Bill West (408) 356-8805 or Hunter Jackson (4080 446- 4097.

MINDSET

San Francisco Mindset Users Group. Meetings: 2nd Thursdays, 7 pm. Call: (415) 626-4240.

MORROW

BAMDUA (Bay Area Micro Decision Users Assoc.). Meetings: 3rd Tues. 7:30 PM Albany Senior Center,846 Masonic Street (just north of Solano) in Albany, CA. Voice:(415) 534-4257. BBS:(415) 654-3882. P.O. Box 5152 Berkeley CA 94705.

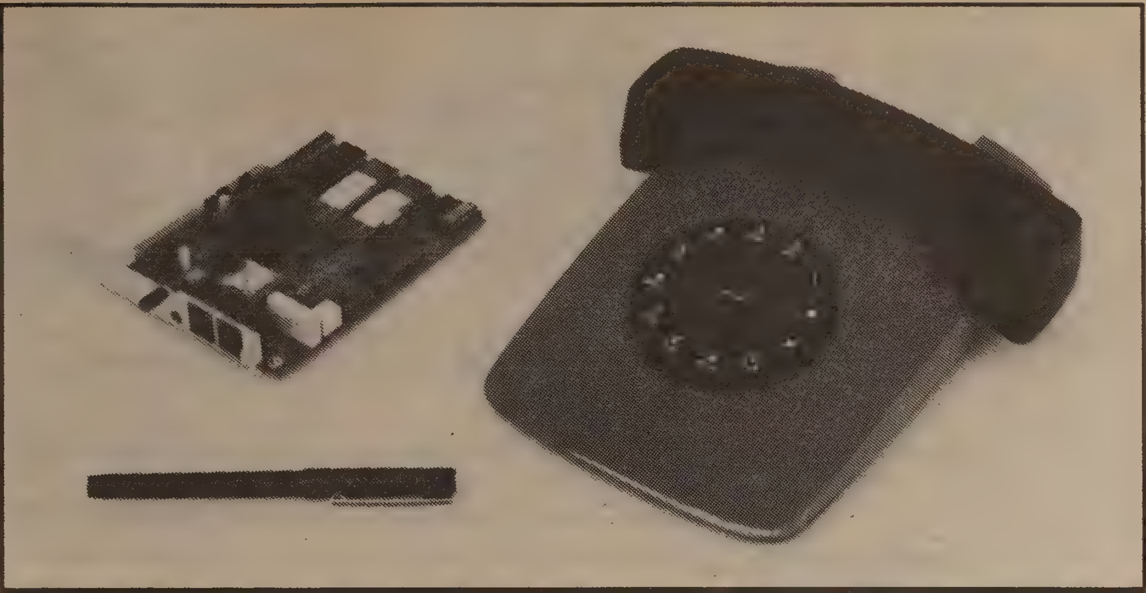
San Francisco Computer Society. Meetings: 1st Mon. 7:00 PM. Homestead S&L, 5757 Geary Blvd., San Francisco. MS-DOS machines, Osborne, Kaypro, Morrow. Call Ralph Gallagher 929-0252.

NEC

Bay Area NEC/100 Users Group. Meetings: 1st and 3rd Thur. 7:30 PM Room 209C at College of Alameda. For those interested in laptops, especially Kyocera 80C85 type (NEC 8201a, Radio Shack Model 100 or 102. Call (415) 658-1889.

NOVELL

Novell Users Group. Meetings: Third Wednesdays, 6:30 pm,



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Northern California Oracle UG. Meetings: Call (408) 738- 8330 for info. Meets every 3 months at different Bay Area locations. Newsletter published between meetings.

OSBORNE

San Francisco Computer Society. Meetings: 1st Monday, 7:00 PM, Homestead S&L, 5757 Geary Blvd., San Francisco. CP\M and DOS machines. No BBS. Call Ralph Gallagher, (415) 929-0252 for information.

PARADOX

San Francisco Paradox Users Group. Meetings: 3rd Wednesday, call Jeffrey Edwards Co. for information, (415) 543-6227.

San Francisco Paradox Users Group, South Bay Chapter. Meetings: 3rd Tuesday, call Jeffrey Edwards Co. for information, (415) 543-6227.

TANDY/RADIO SHACK

BYTE Bandits of America. Meetings: Campbell. Call (408) 379-2774 for info.

CoCoByte. Meetings: Last Saturdays, 2 pm-4 pm. Supporting the Tandy Color Computer 11,2 or 3 with Spanish, English & French software. Write to: CoCoByte, c/o Fabian Rodriguez, A.A. 5976, Cali-COLOMBIA.

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Tandy 1000 (The Mug). Mail-based user group w/ monthly newsletter. Not for PC jrs. Members communicate through newsletter. $8/yr. fee; checks to: Daniel Tuma, 30 Arjang Ct., Alamo, CA 94507-2041.

TRS Nybblers. Meetings: 2nd Fri. 8 PM Chabot College, 25555 Hesperian Blvd., Hayward. MS-DOS, CP/M, laptops, Mod 1, 3, 4, Mod 2, 12, 16, 6000. Bud Gallagher (415) 522-5960 or Bruce Jarvis (415) 846-3575.

REVELATION

Bay Area Revelation UG. Meetings: 1st Tues. Call (415) 759-1210.

SANYO

Sanyo PC Hackers. Meetings: 1st Wed. 7 PM Mercury Room, Mercury Savings & Loan, 99 El Camino Real, Menlo Park.

SOLOMON

San Francisco Solomon III Users Group. Meetings: last Wed.,odd months 6-9 PM Price Waterhouse, 555 California St. 36th Fl., San Francisco. Annual membership - $50; corp. membership - $75.

Solomon User Group of Silicon Valley. Meetings: For info contact Grihalva Associates, 39899 Balentine Dr., Suite 175, Newark CA 94560.

S—100

S—100 Business Users Group. Meetings: 4th Tues. 7:30 PM Santa Clara Univ., Rm. 101, Bannan Engineering Bldg. CP/M & MS-DOS libraries. BBS: (408) 262-5150, 8-N-1,2400/1200/300.

TEXAS INSTRUMENTS

Brea 99'ers Users Group. Meetings: 1st Mon. 7:30 PM Mercury Savings, La Habra, CA.

San Francisco 99ers. Meetings: 3rd Saturdays, 3751 Elston Ave. Call: Fred, (415) 530-8335.

Thousand Oaks Personal Computer Club (TOPCC). Meetings: monthly. Call: (714) 686-0336.

TIMEX/SINCLAIR

Timex Sinclair East Bay Z80 Users Group (TSEBZUG). John Ezike, (415) 843-5507.

Timex Sinclair Peninsula Users Group (TSPUG). Contact George Mockridge, (408) 878-1773.

Timex/Sinclair Users of Silicon Valley (GUTS/SV). Meetings: each Sat. 9 AM Stanford Univ., Jordan Hall (quadrangle), Math Bldg. RM 380C. SW library & newsletter. For topic check PDSE BBS in Sunnyvale (408) 735-7390, 300/1200, 8-N-1, 24 hrs.

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Ventura Desktop Publishing Users Group. Meetings: 1st Tuesday, 7-9:00 PM, 1650 S. Amphlett Blvd., San Mateo. Newly formed group. Call Eleanor Church at (415) 726-3181, or Pam Sheble att 415) 574-2003 for information.

VPUG (Ventura Publisher User Group). Meetings: 3rd. Mon. 6:30 PM Fort Mason, Bldg. A., Rm. 5 San Francisco, CA.

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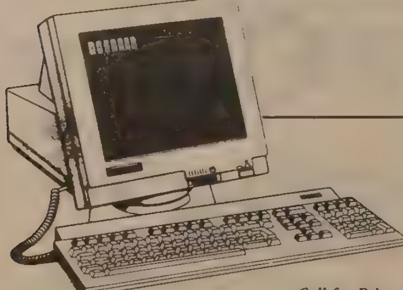

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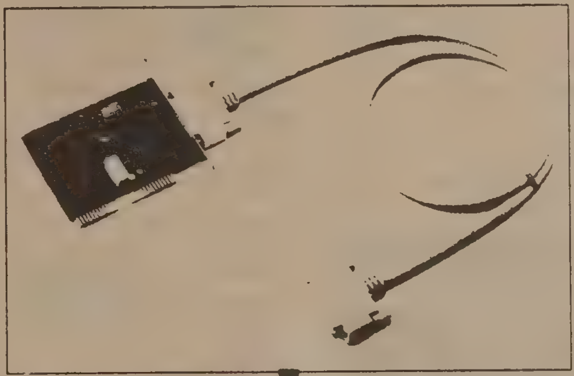

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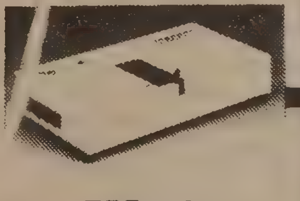

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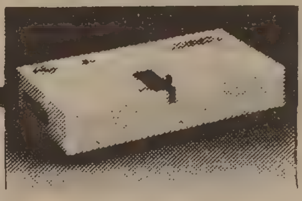

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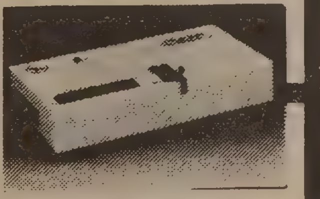

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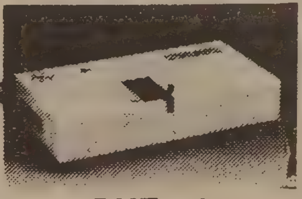

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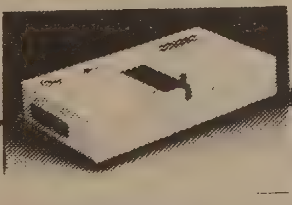

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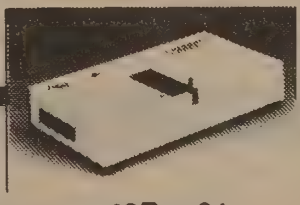

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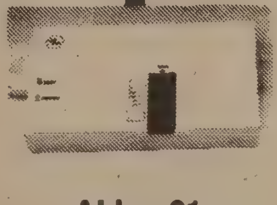

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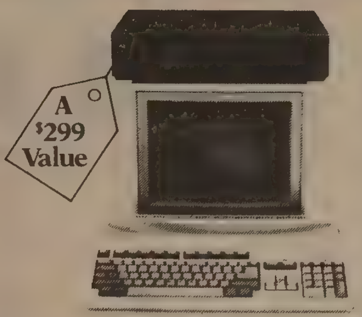

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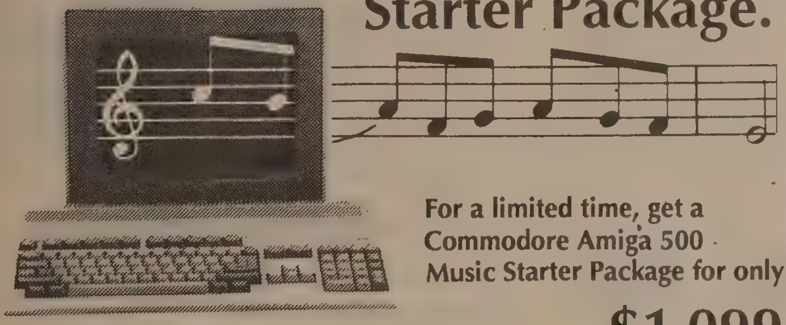

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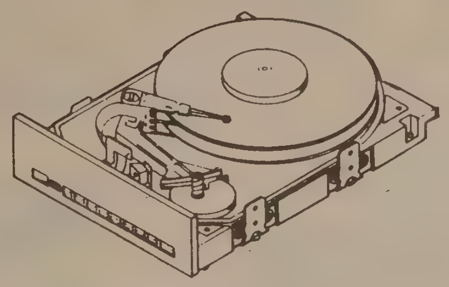

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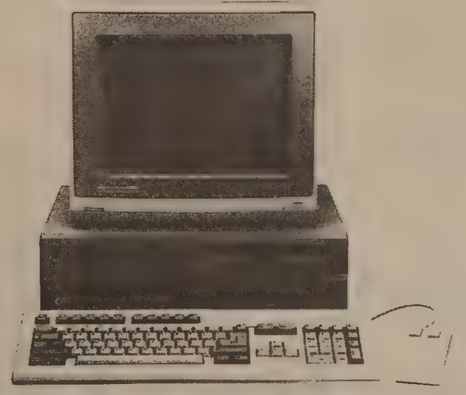

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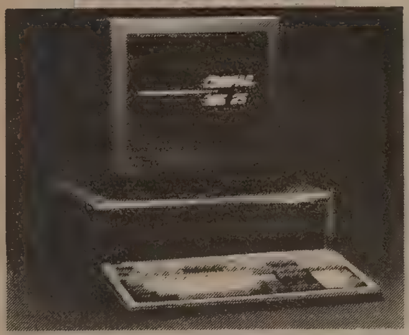

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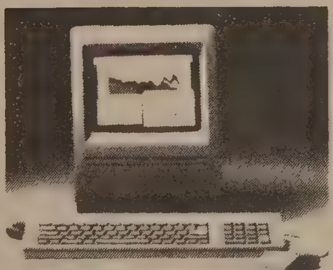

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DVORAK'S LAST COLUMN • BY JOHN C. DVORAK

A Glimpse Into The Future Or How Do Paulina And The Cosmetics Business Relate To The Real World?

It was as I thumbed through the pages of a slick mass-market magazine that it dawned on me. On page three was an Estee Lauder ad. It contained no information. There was no particular product to boost. The ad showed nothing except a photo of a familiar woman. It was the famous model, Paulina Porizkova. It was a two-page ad (black and white to match the shallow depth of the ad, and of Paulina, who appears regularly on the Letterman Show and irritates everyone with any sense—the woman seems vapid).

So there I am actually looking at this dumb ad. And now I'm writing about it. I was paralyzed. Stunned. Kudos to the ad agency.

But was the ad going to make me buy or even consider an Estee Lauder product ever in my life? Seems unlikely. It was one of those so-called institutional ads. These are ads designed to keep you aware of a brand name so that someday you'll have to make a choice between a whole bunch of identical products and you'll hopefully, according to ad theory, buy the one that has a name to which you've been most exposed.

This assumes that the exposure is a positive experience. If you're irritated by the ad, then the results may be different. Compare an Estee Lauder magazine ad with its well-composed picture of the beautiful Paulina to the irritating Levi's Docker TV ads, for example. This is the TV ad, you know, where a bunch of jerks talk nonstop about meaningless idiocies as the camera pictures their various behinds roaming around a room. I know someone who won't buy Levi's Dockers (ever!) because of these moronic ads.

So the overall pleasant experience, it's assumed, of eyeballing Paulina will somehow produce sales. (Magazine publishers will dream up any concept they can to sell ads. Good for them, they need the money more than Estee Lauder.)

Meanwhile, Paulina has a fat contract which brings her something like $280 million a year. Well, maybe a little less, but still a lot. So what does she do for this dough? Nothing. Nothing, that is, but look good. What kind of business is this? A bigger question that you're asking yourselves about now is: what the heck does this have to do with computers?

Well, let me tell you. I've thought about this ad because I knew that such a dopey ad reflected general societal trends. I imagine a book with the title *When Just Looking Good Is Enough*, by Cheryl Tiegs. The fact that these women make seven figures for doing little more than smiling and cocking their head says something about the importance of looking good. What it says is: Looking good means profits. And computer companies that "look good" make all the money. Window dressing pays big money.

I've always had a hangup with the preoccupation with so-called window dressing throughout my working life. It's not that I'm a slob or anything. I like tuxedos, in fact. It's that I spent my working years hating employers who thought that window dressing was important. They wanted you to look the part, play the role, pamper the public. I hated the idea. After all, there was real work to be done. Wasn't there?

Over the years I've concluded that the big believers in window dressing were right! Window dressing is critical to success. The only people who complain about it are the ones who are forced into performing the charade: the company workers who don't think it's important.

This brings us to the real question: how important is it?

We're dealing with the classic "form over function" argument that plagues various disciplines including literature, architecture, engineering, you name it. The successful software and hardware companies have revered window dressing in the form of image and packaging. Take Microsoft (please!). Microsoft has a few outstanding products and a lot of mediocre junkers. Just look at the Microsoft telecommunications program, *Access*, if you want to see a yawner. But it sells. Why? Microsoft is super successful because it's image-oriented. It's aware of the importance of window dressing. It's always been nutty about packaging although its image lacks the slick East Coast or Los Angeles patina. Microsoft has played around with its logo, including the recent addition of an inane notch. It's also played around with its packages starting with the ones which came in the clear plastic—always broken—box. Today it subscribes to the cereal box approach to packaging. You get a lot of air and Microsoft gets a lot of shelf space.

Borland has been nipping on the heels of the Microsoft theories with packages which looked like they came from Microsoft, but with less air and more books. Borland likes to sell lots of little books. Borland's earlier packages consisted of a cheap paperback book (aka documentation/instructions) that was cute and well done. They came with a disk and sold for $70. The image was the image of a good value. Nowadays Brady Books is producing a similar kind of package for even less money. *PC Magazine* via Bantam Books brought out the *DOS Power Tool Book* for $49.95 and they're selling like hot cakes. It's thick and the image is one of value.

Borland, the company that started this concept, has decided to eschew this money-making market and instead upgrade to the Microsoft league. Borland is now in the throes of a financial pinch. Fact is, the company was leading the way with the book-in-a-disk concept of marketing. The only other company that came close to the idea was Adam Osborne's Paperback Software. Paperback Software made the simple mistake of not providing a fat enough book.

I spent my working years hating employers who thought that window dressing was important. They wanted you to look the part, play the role, pamper the public. I hated the idea. After all, there was real work to be done.

Both the book and disk market and the big box market require window dressing. Today the window dressing is simple for both: bulky bloated packages.

Exactly why the public has opted for bulky bloated fat packaging in many areas mystifies me. They want big boxes of soap, fat wordy novels, huge ad-filled magazines, BIG bags of potato chips, large software boxes. There are some exceptions and reversals to this trend, like the recent fad towards small footprint PC-AT clones, smaller disk drives, Japanese miniaturization in general. Even so, the Japanese desire to miniaturize runs into a brick wall with the American market. For years Americans have resisted the trend in high-fi audio toward the Japanese-designed mini-components in favor of the bulky man-sized monster amplifier. For the most part, bigger is better, when it comes to anything, especially software. Perhaps this is because things ethereal, like software, have to be exaggerated, blown out of proportion, and made whiz bang to catch on. Seems so.

If you think about the complex selling necessary to sell someone something as screwy as software, then you realize why this rigmarole is necessary. Let's face it, Estee Lauder has the same kind of challenge. It may be even harder for them since the idea is to sell as little as possible for as much money as possible. The super large box of air is not a good idea. Worse, the cosmetics business is built on a fashion that has lasted a long time, but one that might end any minute. There are plenty of societies where cosmetics aren't used.

Then again window dressing, by its nature, is cosmetics. So the cosmetic sales people should be the experts in selling this non-entity. If so, then their use of the captivating photo combined with nothing more than a logo might be the best ad layout for the high technology company too. Who needs information?

Gee, I can hardly wait until this becomes a trend. ■

John C. Dvorak graduated from the University of California. he is a contributing editor of PC magazine and MacUser, considered by many to epitomize the contrarian view of things—a charge that he vehemently denies. Dvorak's motto is: If you have nothing nice to say, then don't say anything at all.

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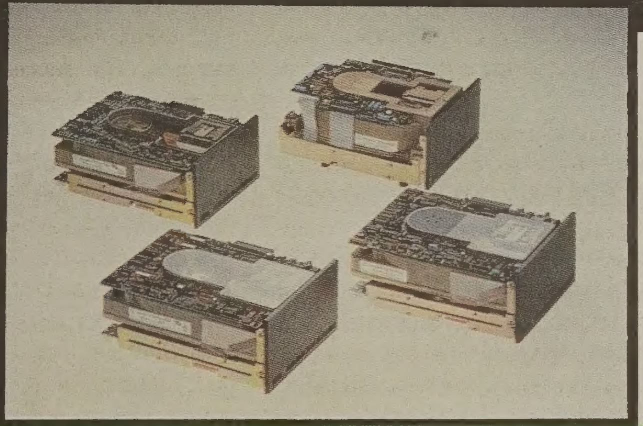

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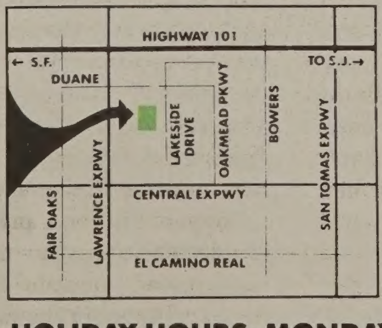
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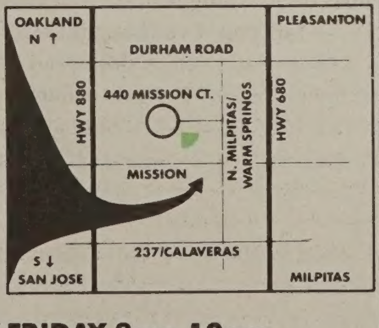
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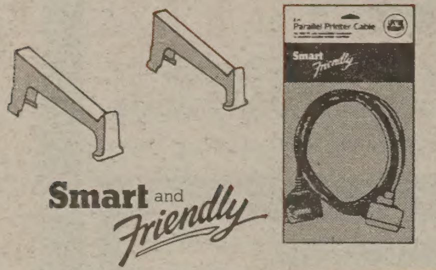

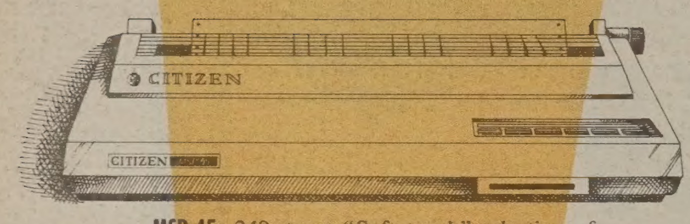

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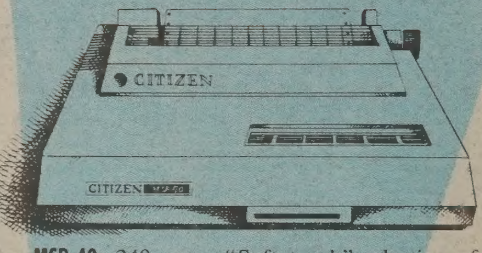

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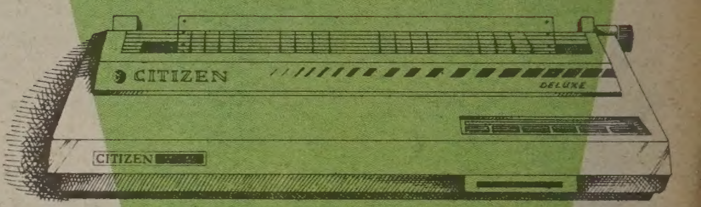

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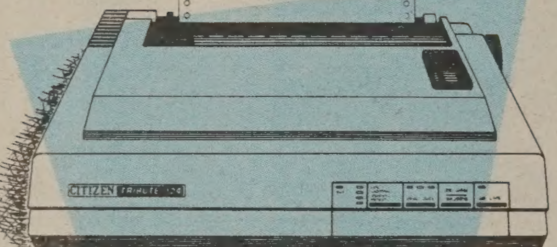

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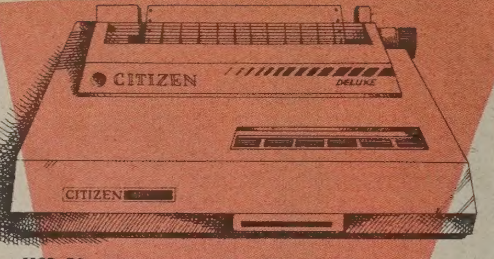

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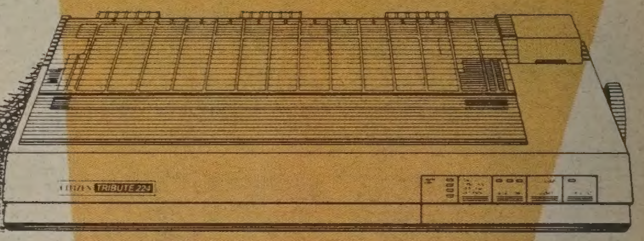

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